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Joyce Hudson

Barbara J. Sayers

Department of Linguistics

Research School of Pacific Studies

THE AUSTRALIAN NATIONAL UNIVERSITY

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WALMATJARI: NOMINATIVE-ERGATIVE OR NOMINATIVE-ACCUSATIVE?

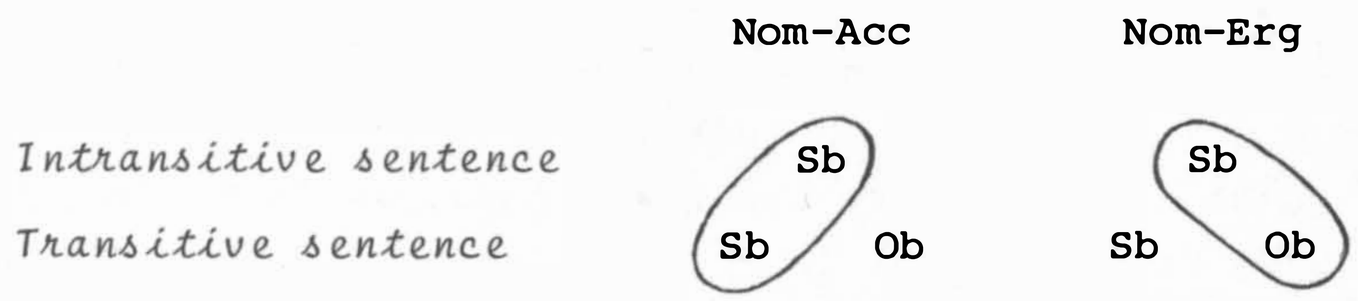
JOYCE HUDSON

0. INTRODUCTION

Nominative-ergative and nominative-accusative type languages have been much under discussion recently. The distinction is basic to this paper which consists of a discussion of the Walmatjari language in relation to these language types.[1]

The nominative-accusative type distinguishes between nominative and accusative cases in the traditional terminology of subject and object. In these languages the subject of both a transitive and an intransitive sentence take the same case inflection (nominative) and the object of a transitive sentence has a different case inflection (accusative).

Nominative-ergative languages differ in having a single case inflection (nominative) for the subject of an intransitive and the object of a transitive sentence, and a different case (ergative) for the subject of a transitive sentence (Hockett 1958:234-5). The diagram shows the contrast of case groupings in the two systems.



Most of the Aboriginal languages of Australia can be divided into groups on the basis of the distinction given above. In many Australian languages case inflections of nouns follow a nominative-ergative system, while in a small number they follow a nominative-accusative system (Hale 1970:759). Those in which noun inflections are nominative-ergative usually have some features of nominative-accusative patterning

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in the pronominal system (Glass & Hackett 1970:35). In languages in which both systems appear to operate in the surface structure, it is important to enquire whether the deep structure might follow a single system. Hale (1967-68, 1970) has suggested that some Australian languages, such as Walbiri, have nominative-accusative deep structure. Dixon (1973) has presented proof of the nominative-ergative deep structure of the Dyirbal language of North Queensland.

The Walmatjari language of Western Australia, while showing nominative-ergative inflection of both nouns and free pronouns in the surface structure, does not appear to have a nominative-ergative deep structure. It is the aim of this paper to present evidence of the case system in the deep structure of Walmatjari.

Section 1 demonstrates the nominative-ergative nature of Walmatjari surface morphology. Section 2 gives a nominative-accusative deep structure and formulates transformations in terms of this. In contrast, Sections 3 and 4 give two alternative types of nominative-ergative deep structure and state transforms in terms of rather different constituency trees that these entail.

1. THE NOMINATIVE-ERGATIVE CASE SYSTEM

On the surface, Walmatjari appears to be a nominative-ergative type language. Each noun phrase is inflected for case. The subject of a transitive sentence is inflected with the suffix -ḻu which has several alternants (ergative case) while the subject of an intransitive sentence and the object of a transitive sentence are both marked by zero inflection (nominative case). This is quite in line with the shape of morphemes in other nominative-ergative languages in Australia. Dixon (1972:9) says: "Nominative...is almost always realised by zero inflection....There are two common ergative inflections...-gu or -ŋgu... and -ɭu (with variant -ḻu in some languages)." It is corroborated by Hale (1970:758) who says that the ergative case is marked "normally by a suffix reflecting ancestral *-ŋku ∿ -ɭu" and the nominative case is "normally phonologically null".

The following examples illustrate the nominative-ergative system of case inflection in Walmatjari.

(1) ŋanpayi-Ø pa-Ø kiřaṇani ŋuřa-ŋa
man-Nom AUX *sitting* *camp*-Loc
'The man was sitting in the camp.'

(2) kakatji-Ø pa-Ø-Ø pinja ŋanpayi-ḻu
goanna-Nom AUX *hit* *man*-Erg
'The man hit the goanna.'

(3) ŋanpayi-Ø pa-Ø-Ø kakatji-ɭu patjanI
man-Nom AUX *goanna*-Erg *bit*
'The goanna bit the man.'

(4) kakatji-Ø pa-Ø ɭapaɳI
goanna-Nom AUX *ran*
'The goanna ran.'

Note: The ergative inflection has several alternants. Those appearing in this paper are -ɭu on words of three or more syllables ending in a vowel and -ŋu on disyllabic words ending in a vowel.

Walmatjari differs from many Australian languages in that the pronominal system is also nominative-ergative. In nominative-ergative type languages of the continent "the most common situation is for nouns to inflect according to a nominative-ergative pattern, while pronouns at least superficially follow a nominative-accusative pattern" (Dixon 1972:4). Free pronouns in Walmatjari take exactly the same case inflections as do nouns.

(5) ŋatju-Ø ma-ɳa yanI
I-Nom AUX *went*
'I went.'

(6) kakatjI-Ø ma-ɳa-Ø pInja ŋatju-ŋu
goanna-Nom AUX *hit* *I*-Erg
'I hit the goanna.'

(7) ŋatju-Ø pa-tja-Ø patjanI kakatji-ɭu
me-Nom AUX *bit* *goanna*-Erg
'The goanna bit me.'

2. NOMINATIVE-ACCUSATIVE DEEP STRUCTURE RULES

Although the morphological evidence suggests an entirely nominative-ergative language, there are other factors which suggest that the deep structure may be nominative-accusative, and that the nominative-ergative case marking would be applied at a late stage of the grammar.

2.1 *VERBAL AUXILIARY*

The best evidence suggesting a nominative-accusative deep structure is the verbal auxiliary. This is an obligatory constituent which normally occurs as the second word in the sentence. The auxiliary root serves, together with certain verb inflections, to indicate the mood of the sentence. Suffixed to the auxiliary root are morphemes which show person and number agreement with the noun phrases of the sentence.

(8) yanl ma-ṇa-lu ŋanampa-Ø
went INDIC-Sb:1:ex-Sb:pl *we*:ex-Nom
'We all (exclusive) went.'

Note: There are three auxiliary roots. The indicative root has the form ma- before nasals and pa- elsewhere. When pa- is immediately followed by a morpheme beginning with p the root pa- is deleted.

The auxiliary reveals the nominative-accusative system in that, while subject of transitive and intransitive sentences are marked differently in noun phrases, they are shown identically in the auxiliary. Also the object of transitive sentences and subject of intransitive sentences (nominative case) are marked identically in noun phrases but differently in the auxiliary.

(9) paǰi-tjaǰa-Ø pa-lu-plnja njanja maṇin-waṇtl-ļu
boy-du-Nom INDIC-Sb:pl-Ob:du *saw* *woman*-pl-Erg
'The women saw the two boys.'

(10) * maṇin-waṇtl-Ø pa-plla-nja [2] njanja paǰi-tjaǰa-ļu
woman-pl-Nom INDIC-Sb:du-Ob:pl *saw* *boy*-du-Erg
'The two boys saw the women.'

(11) maṇin-waṇtl-Ø pa-lu wuṇa yanl
woman-pl-Nom INDIC-Sb:pl *walkabout* *went*
'The women went for a walk.'

(12) * paǰl-tjaǰa-Ø pa-plla [2] wuṇa yanl
boy-du-Nom INDIC-Sb:du *walkabout* *went*
'The two boys went for a walk.'

The morpheme -lu in the auxiliary of sentences (9) and (11) refer to the plural subject *'the women'*; -nja in (10) refers to *'the women'* as transitive object; -plla in (10) and (12) refers to the dual subject *'the two boys'* and -plnja in (9) refers to the dual object.

Only four types of noun phrases can be cross-indexed in the auxiliary; these are noun phrases in nominative, ergative, benefactive and accessory cases. In any single sentence the auxiliary usually cross-indexes only two of these noun phrases.[3] One is always the subject noun phrase, the other is chosen according to the following order of preference:

accessory
benefactive
object.

That is, if an accessory noun phrase appears in the derivation of a sentence it will be cross-indexed in the auxiliary but benefactive and object will not. If accessory noun phrase does not appear but benefactive noun phrase does, then benefactive but not object will be cross-

indexed. Object noun phrase is only cross-indexed if neither benefactive nor accessory noun phrase appears. If a sentence does not include accessory, benefactive or object noun phrase then the auxiliary only cross-indexes the subject.

The low status of object noun phrase adds to the evidence that nominative-ergative case system has little importance for deep structure, while the high status of subject noun phrase (referring either to transitive subject marked by ergative case inflection or to an intransitive sentence marked by nominative case inflection) suggests that "subject" is an important deep structure concept.

2.2 *PHRASE STRUCTURE RULES*

Rules for generating nominative-accusative Phrase Markers include:[4]

i. $S \longrightarrow (S) + AUX + NP + VP + (S)$

ii. $VP \longrightarrow V + (NP_{Ob}) + (NP_{Bn}) + (NP_{Ac})$

iii. $V \longrightarrow \begin{Bmatrix} Vtr & / -- NP_{Ob} \\ Vintr \end{Bmatrix}$

The noun phrase occurring in Rule i. is transitive or intransitive subject; the noun phrases occurring in Rule ii. are transitive object, benefactive and accessory.

Tree 1 shows the deep structure for sentence (13).

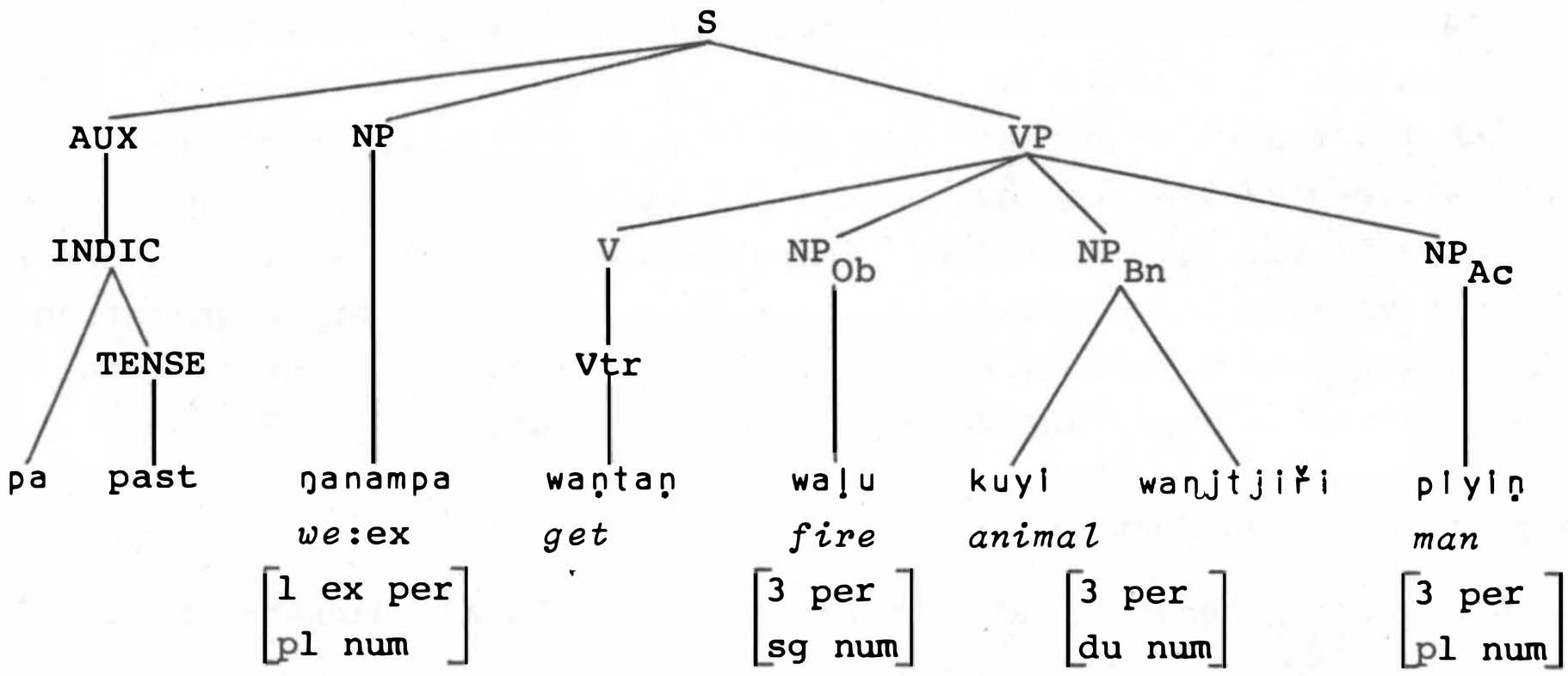
(13) * waṇtaṇi ma-ṇa-Ø-njanaŋu-lu-ḷa[5] ŋanampa-ḷu
got INDIC-Sb:1:ex-Ac:3-Ac:pl-Sb:pl-Ac *we*:ex-Erg

piyiṇ-waṇti-ḷa waḷu-Ø kuyi-tjařa-wu wanjtjiři-tjařa-wu
man-pl-Ac *fire*-Nom *animal*-du-Bn *kangaroo*-du-Bn

'We got fire from the people for the two kangaroos (to cook them).'

(Tree 1 overleaf)

Tree 1



2.3 *OBLIGATORY TRANSFORMATIONS*

The obligatory transformational rules which are necessary to bring this sentence to the surface structure are Tense Movement, Case Indexing and NP_{Ob} Movement.

Tense Movement Rule

Tense Movement is a simple transformation moving the **TENSE** node from under the **AUX** and attaching it under the **V** node. This rule is not formally stated here.

Case Indexing Rule

Case Indexing copies the person and number features from the noun phrases as suffixes onto the auxiliary root. The rule is given below.

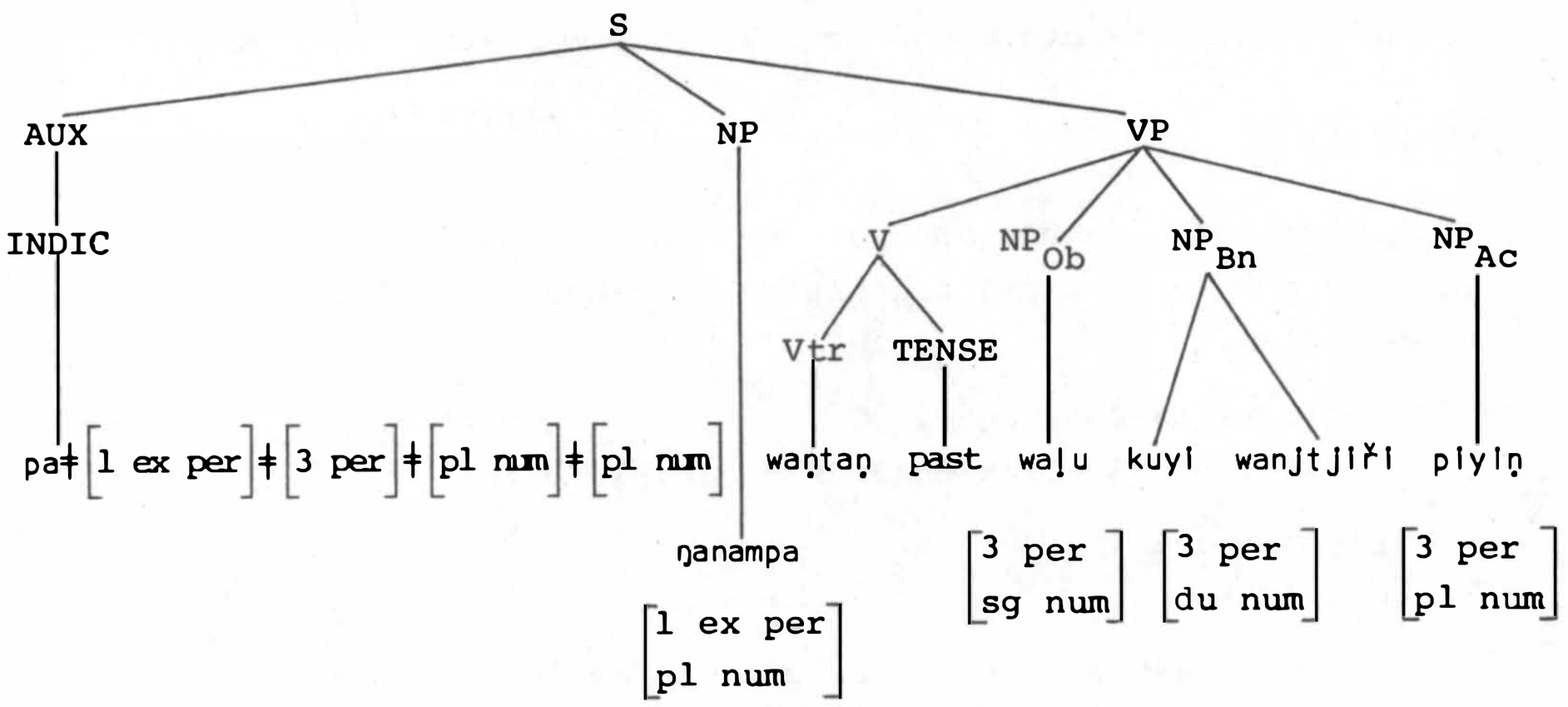
T. Rule (1) Case Indexing

$$\begin{array}{lccccccc}
\text{SD} & \text{AUX} & + & \text{NP} & + & \text{VP}\left[\text{X} + \text{NP}\right]_{\text{VP}} \\
 & & & \begin{bmatrix}\alpha_{\text{i}}\ \text{per}\\ \beta_{\text{i}}\ \text{num}\end{bmatrix} & & \left[\begin{bmatrix}\alpha_{\text{ii}}\ \text{per}\\ \beta_{\text{ii}}\ \text{num}\end{bmatrix}\right] \\
 & 1 & & 2 & & 3 \quad 4 \\
\text{SC} \Longrightarrow & 1 \neq \begin{bmatrix}\alpha_{\text{i}}\ \text{per}\end{bmatrix} \neq \begin{bmatrix}\alpha_{\text{ii}}\ \text{per}\end{bmatrix} \neq \begin{bmatrix}\beta_{\text{ii}}\ \text{num}\end{bmatrix} \neq \begin{bmatrix}\beta_{\text{i}}\ \text{num}\end{bmatrix} & & 2 & & 3 \quad 4
\end{array}$$

That is, the auxiliary root is followed by four morphemes which specify person and number of subject and accessory/benefactive/object. The first morpheme refers to the person of the subject, the second to the person of the accessory/benefactive/object; the third morpheme refers to the number of the accessory/benefactive/object and the fourth to the number of the subject.[6]

Applying Case Indexing and Tense Movement to Tree 1 we obtain:

Tree 2



As NP_{Ac} is the rightmost constituent dominated by VP in this example it is the one cross-indexed, along with the subject, onto AUX. If it were not present then the last NP dominated by VP would be cross-indexed, either NP_{Bn} or NP_{Ob}.

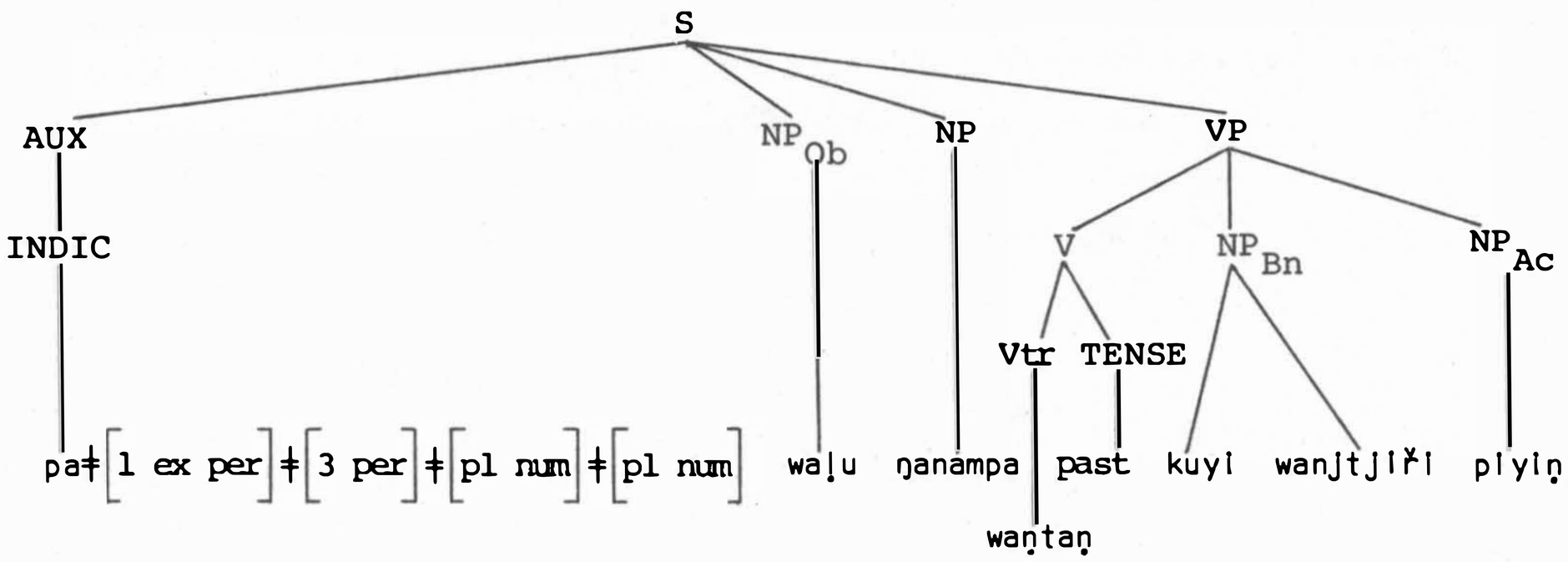
NP_{Ob} *Movement Rule*

NP_{Ob} Movement simply takes the object noun phrase from under VP and attaches it under S immediately after AUX. A formal statement of this rule is not given here.

Applying NP_{Ob} Movement to Tree 2 gives Tree 3.

(Tree 3 overleaf)

Tree 3



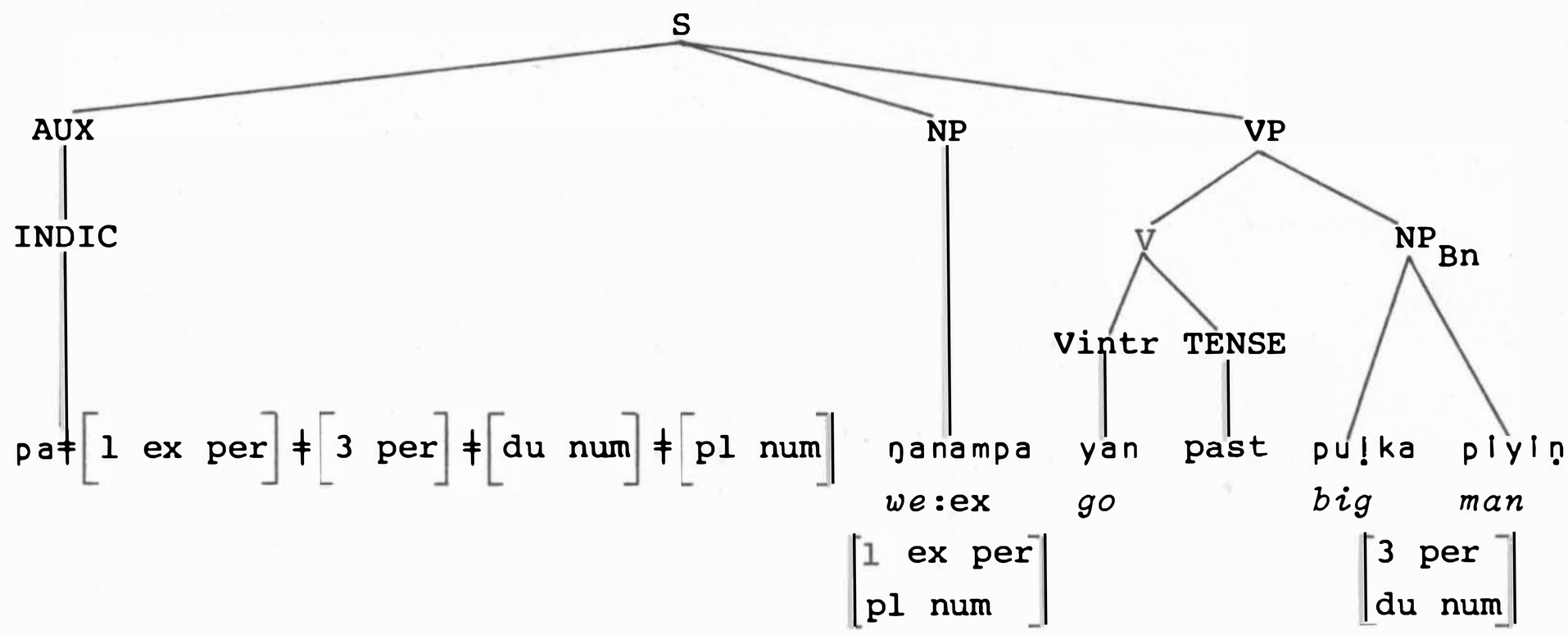
NP_{Ob} Movement does not apply to sentences containing intransitive verbs. Tree 4 shows the intransitive sentence (14) at this stage of the derivation.

(14) * yanɨ ma-ṇa-Ø-pɨlaŋu-ɨu [5] ŋanampa-Ø puḷka-tjařa-wu
went INDIC-Sb:1:ex-Bn:3-Bn:du-Sb:pl *we*:ex-Nom *big*-du-Bn

pɨyiṇ-tjařa-wu
man-du-Bn

'We (exclusive) went on behalf of the two bosses.'

Tree 4



2.4 CASE MARKING RULES

Trees 3 and 4 are now ready for Case Marking Rules to apply. They are:

i. Leftmost **NP** is given nominative case inflection.

ii. Any other **NP** before **VP** is given ergative case inflection.

iii. Noun phrases dominated by **VP** are given benefactive case inflection if marked NP_{Bn} and accessory case inflection if marked NP_{Ac}.

The above rules result in object of transitive and subject of intransitive sentences being identically marked for nominative case while subject of transitive sentences are marked for ergative case.

2.5 *TRANSFORMATIONS INVOLVING TWO SENTENCES*

Three transformations provide further evidence of a nominative-accusative deep structure. In the derivation of each there are two sentences and the same constraint applies to all three transformations. The constraint is that the subjects of the two sentences must be the same referent regardless of transitivity. It is the subject that is the important constituent in these transformations rather than nominative or ergative. The transformations are -u¦a Insertion, -u Insertion and -tja: Insertion. Examples are given for -u¦a Insertion to illustrate two of the combinations of transitivity in these dual sentence transformations.

-u¦a *Insertion Rule*

The -u¦a Insertion transformational rule is applied to the derivational string

S + AUX + NP + VP.

The action of the lower sentence chronologically precedes that of the **VP**. -u¦a Insertion deletes all nodes except **V** in the lower sentence and suffixes -u¦a to the verb. The rule is given below.

T. Rule (2) -u¦a *Insertion*

$$SD \quad [_S\, [_S\, \text{AUX} + \text{NP} + \text{V} + \text{X}]_S + \text{AUX} + \text{NP} + \text{VP}]_S$$

$$\qquad\qquad 1 \quad 2 \quad 3 \quad 4 \quad 5 \quad 6 \quad 7$$

$$SC \Longrightarrow \quad \emptyset \quad \emptyset \quad 3 \dashv u¦a \quad \emptyset \quad 5 \quad 6 \quad 7$$

Constraint 2 = 6 referentially

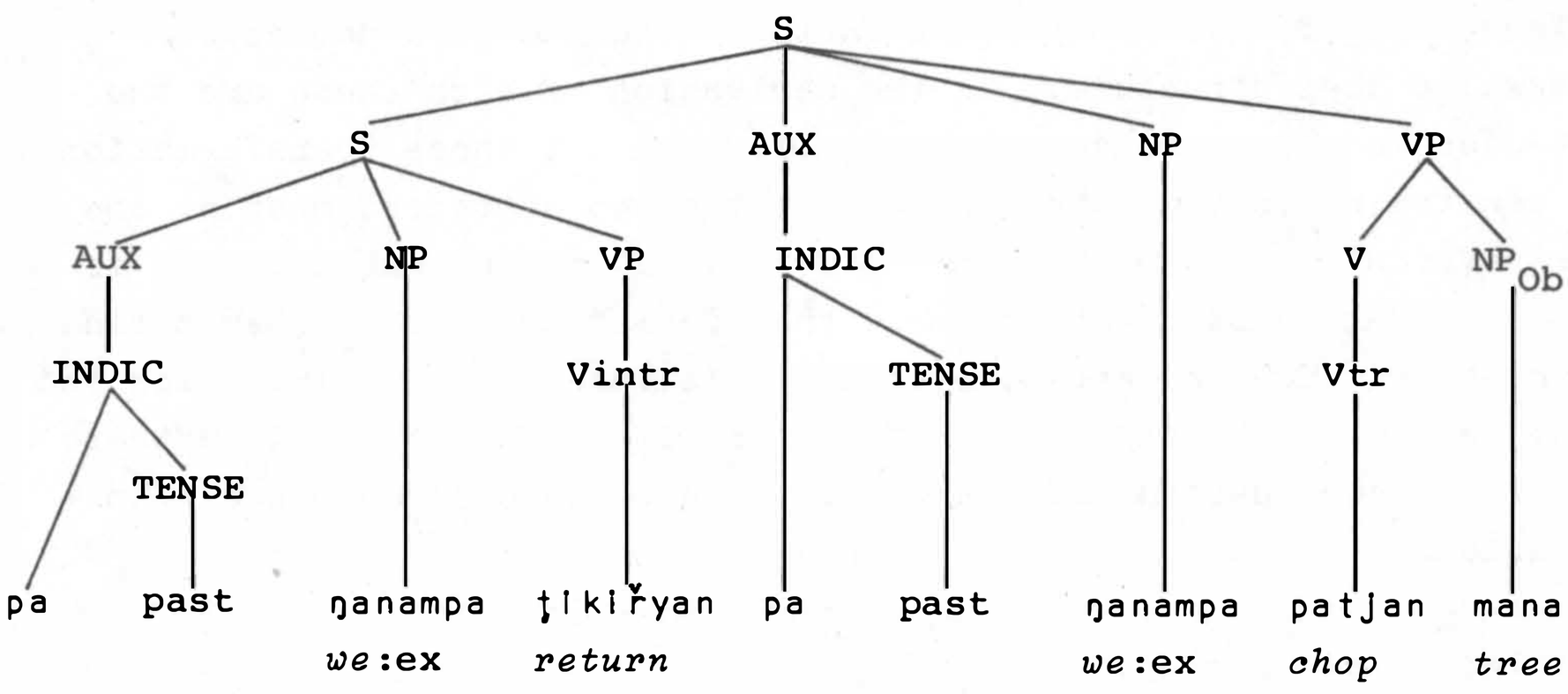
Sentences (15) and (16) are examples of the surface structure of sentences to which -uḷa Insertion has applied. Trees 5 and 6 illustrate these before -uḷa Insertion has applied.

(15) * ʈḷkḷřyan-uḷa ma-ṇa-Ø-nja-lu [5]
return-after INDIC-Sb:1:ex-Ob:3-Ob:pl-Sb:pl

mana-waṇtḷ-Ø patjanḷ
tree-pl-Nom *chopped*

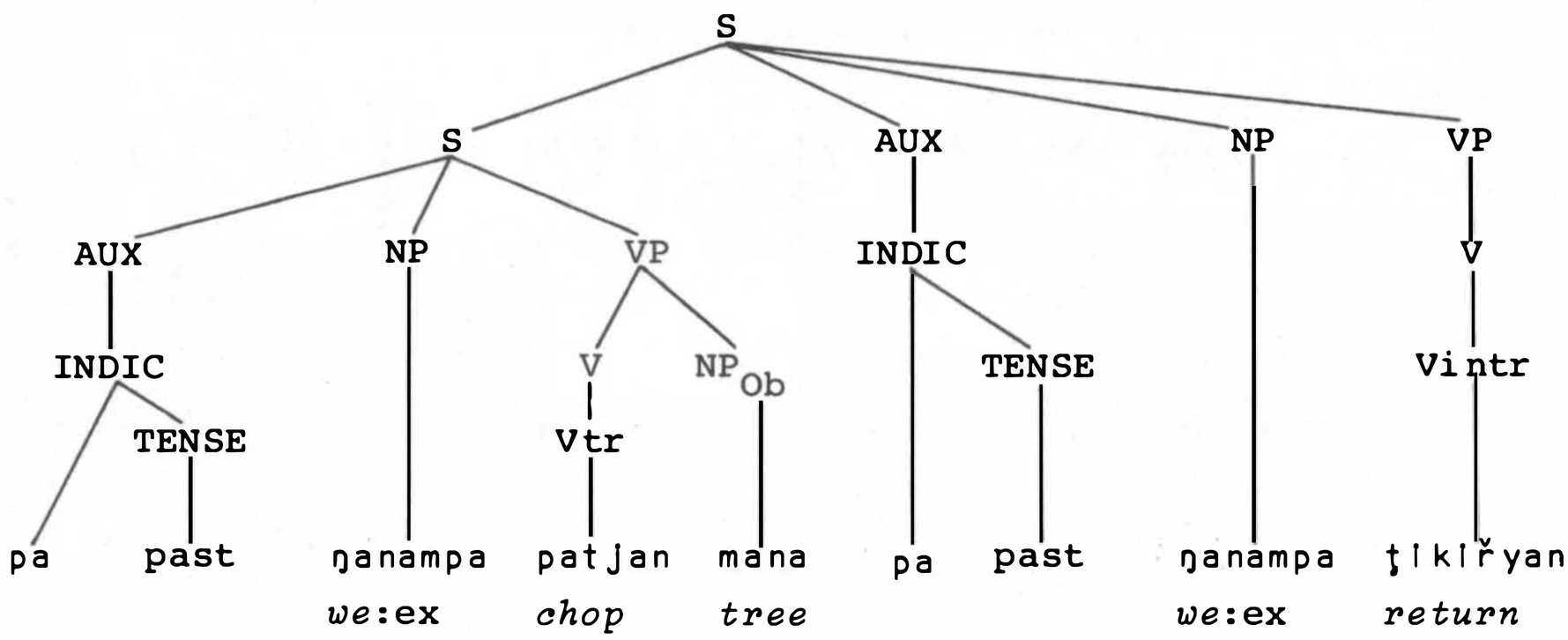
'Having returned we chopped trees.'

Tree 5



(16) patjan-uḷa ma-ṇa-lu ʈḷkḷřyanḷ
chop-after INDIC-Sb:1:ex-Sb:pl *returned*
'Having chopped (it) we returned.'

Tree 6



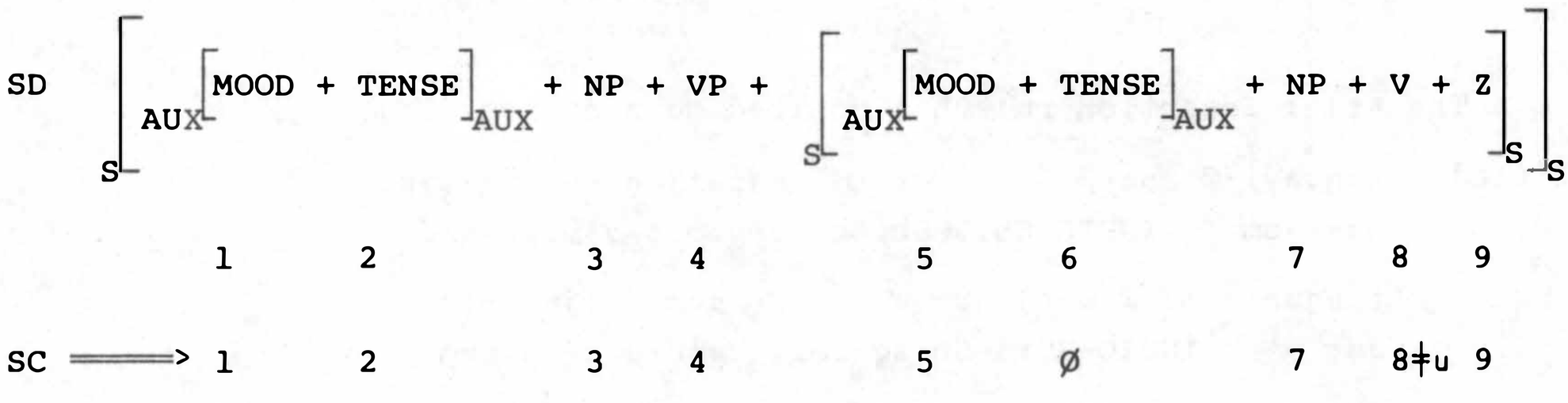
-u Insertion Rule

The -u Insertion transformational rule applies to the derivational string

AUX + NP + VP + S.

In this case the action of the lower sentence follows that of the **VP** but as well as being chronologically related the action of the lower sentence is purposive. This transformation deletes the **TENSE** node from under the **AUX** and suffixes -u to the verb of the lower sentence. The three constraints necessary for -u Insertion to apply are that mood, tense and subject of both sentences must be the same. The -u Insertion rule is given below.

T. Rule (3) -u Insertion



Constraint 1 = 5
2 = 6
3 = 7 referentially

Sentence (17) is an example of the surface structure of a sentence to which -u Insertion has applied.

(17) * paylntařl-ŋuřa-Ø pa-Ø-lu yanku
Bieundurry-friends-Nom INDIC-Sb:3-Sb:pl *will:go*
plklplkl-wu pa-Ø-Ø-ļa-lu[5] mu:puŋ-u
pig-Bn INDIC-Sb:3-Bn:3-Bn:sg-Sb:pl *search-for*
'Bieundurry and his friends will go to look for pigs.'

-tja: Insertion Rule

-tja: Insertion is a conjoining rule. The derivational string to which it applies is

S + S.

The suffix -tja: means *'and'* and this rule only inserts -tja: between the two sentences. In order for -tja: Insertion to apply, both sentences

must have the same mood, tense (which are incorporated in the auxiliary) and subject. The rule is:

T. Rule (4) -tja: Insertion

SD $[_S$ AUX + NP + VP $]_S$ + $[_S$ AUX + NP + VP $]_S$

1 2 3 4 5 6

SC ⟹ 1 2 3≠tja: 4 5 6

Constraint 1 = 4
2 = 5 referentially

The -tja: Insertion rule has applied to sentence (18).

(18) ŋanpayi-Ø pa-Ø-Ø papatjani-njiřa-tja:
man-Nom INDIC-Sb:3-Sb:sg *cry:out-always-and*
tjuŋani ma-Ø-Ø-njanu pamař-tjaʈi-ɭu
cut INDIC-Sb:3-Sb:sg-refl *stone-with*-Erg

'The man was always calling out and cutting himself with stones.'

2.6 *IMPERATIVE TRANSFORMATION*

The last evidence of nominative-accusative deep structure presented here is provided by the Imperative transformation. It applies to both transitive and intransitive sentences where **AUX** dominates **IMPER** (imperative mood). As with the transformations presented previously as evidence of a nominative-accusative deep structure, the subject is the important constituent in the Imperative Transformation. The Imperative rule is:

T. Rule (5) Imperative

SD $[_{IMPER}$ Ø≠ $[\alpha_{\text{per}}]$ ≠ $[\alpha_{\text{per}}]$ ≠ $[\beta_{\text{num}}]$ ≠ $[\beta_{\text{num}}]_{IMPER}$ + X + NP + V + Y

1 2 3 4 5 6

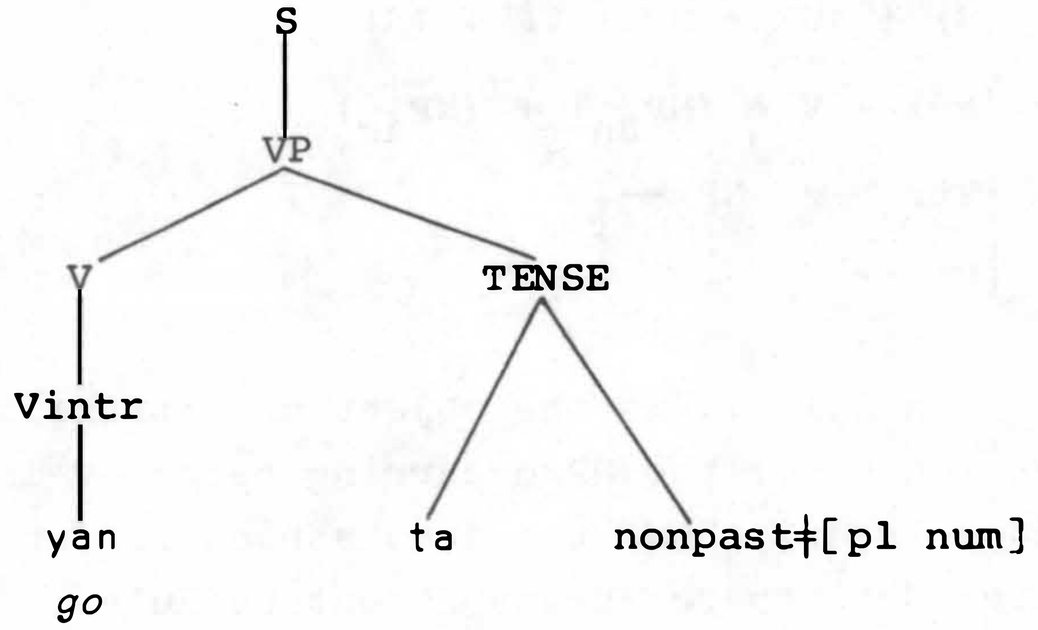
SC ⟹ Ø Ø 3 Ø 5≠2 6

There are three changes brought about by this transformation. Firstly the subject noun phrase is deleted. Secondly, the subject person morpheme [α_i **per**] and the auxiliary root, which are dominated by **IMPER**, are deleted while the subject number morpheme [β_i **num**] remains with other morphemes which have been cross-indexed onto the auxiliary. Thirdly, the remaining morphemes dominated by **IMPER** (accessory/benefactive/object person, accessory/benefactive/object number and subject number), are removed from the domination of **AUX** and attached as suffixes to the verb. The imperative sentence in surface structure often contains only one constituent, the verb. Other constituents such as object noun phrase and benefactive noun phrase are optional.

Trees 7 and 8 show sentences (19) and (20) after the Imperative rule has applied and before late rules optionally delete the object and benefactive noun phrases.

(19) yanta-lu
go-Sb:pl
'You all go!'

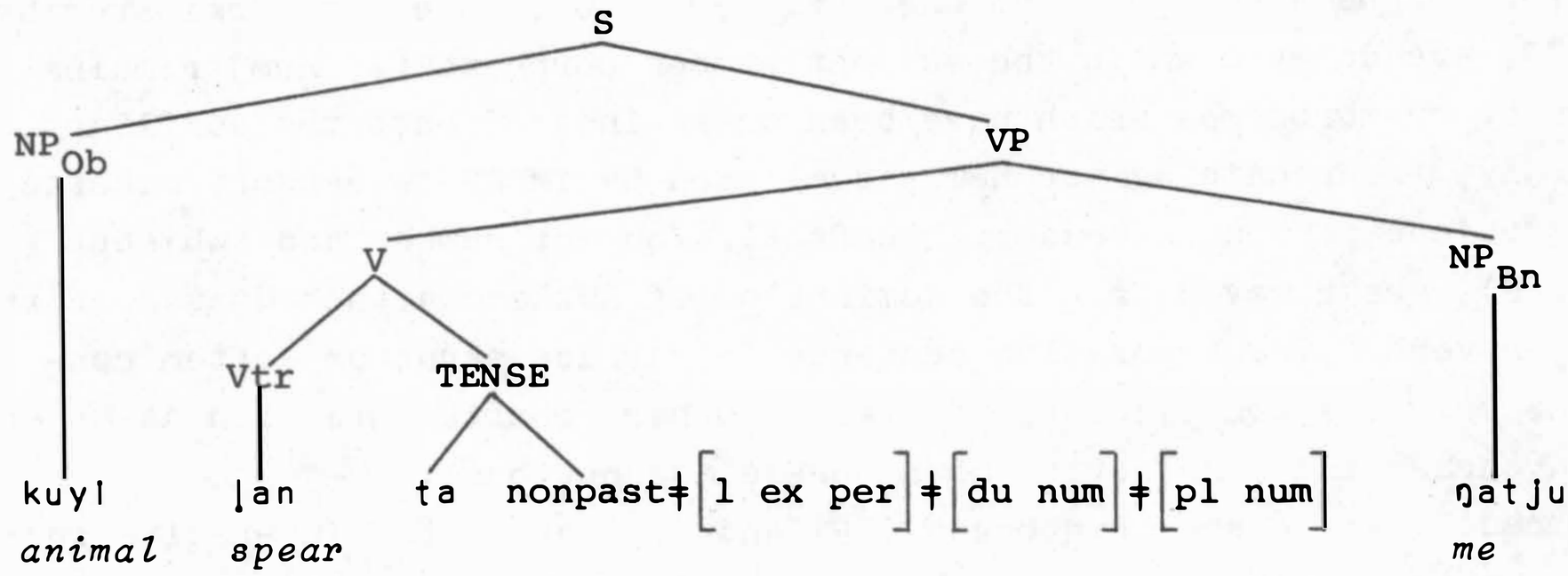
Tree 7



(20) kuyl-Ø ¡anta-tjaŕa-ŋu-lu
animal-Nom *spear*-Bn:1:ex-Bn:du-Sb:pl
'You all spear an animal for us two (exclusive)!'

(Tree 8 overleaf)

Tree 8



3. NOMINATIVE-ERGATIVE DEEP STRUCTURE RULES TYPE 1

3.1 *PHRASE STRUCTURE RULES*

There are two types of nominative-ergative deep structure that could be suggested for Walmatjari. The first includes the following phrase structure rules.

i. $S \longrightarrow (S) + AUX + NP + VP + (S)$

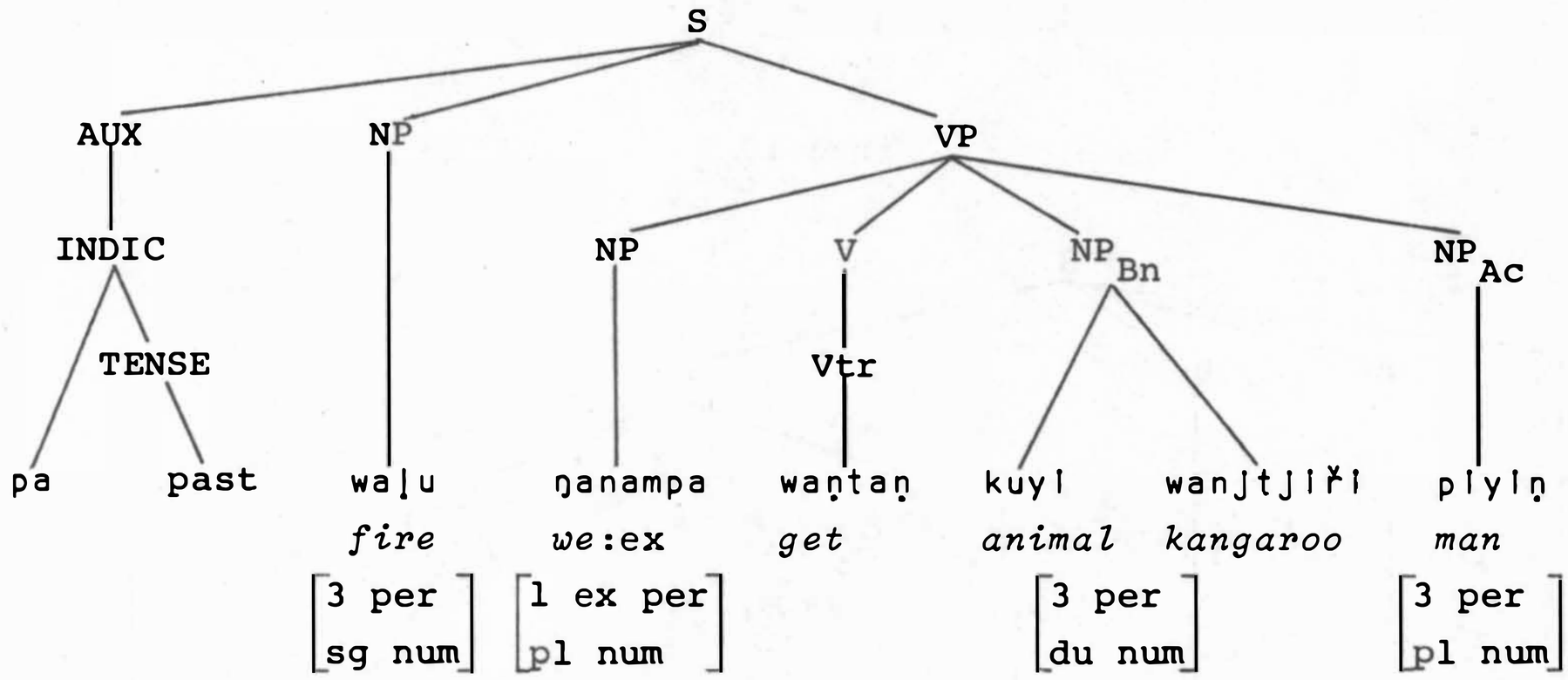
ii. $VP \longrightarrow (NP) + V + (NP_{Bn}) + (NP_{Ac})$

iii. $V \longrightarrow \left\{ \begin{matrix} Vtr \quad / \quad NP\ -- \\ Vintr \end{matrix} \right\}$

The NP occurring in Rule i. is the object of a transitive or subject of an intransitive sentence; the NP occurring before V in Rule ii. is transitive subject. Tree 9 shows the deep structure for sentence (13) when it is generated from these Phrase Structure Rules.

(Tree 9 on next page)

Tree 9



3.2 *OBLIGATORY TRANSFORMATIONS*

A slightly different set of transformations is needed to bring the sentence from this derivation to the surface structure. They are Ergative NP Movement, Tense Movement, and Case Indexing transformations.

Ergative NP Movement Rule

Ergative NP Movement only applies to transitive sentences. It moves the ergative NP out from the domination of VP and attaches it to the S node immediately following the AUX node. This transformation is necessary so that the person and number of the ergative noun phrase in the transitive sentence (subject) can be cross-indexed onto the auxiliary along with the nominative noun phrase of the intransitive sentence (subject). The Ergative NP Movement Rule is given below.

T. Rule (6) Ergative NP Movement

SD AUX + NP + $_{VP}[$NP + X$]_{VP}$

1 2 3 4

SC ⟹ 1 3 2 ∅ 4

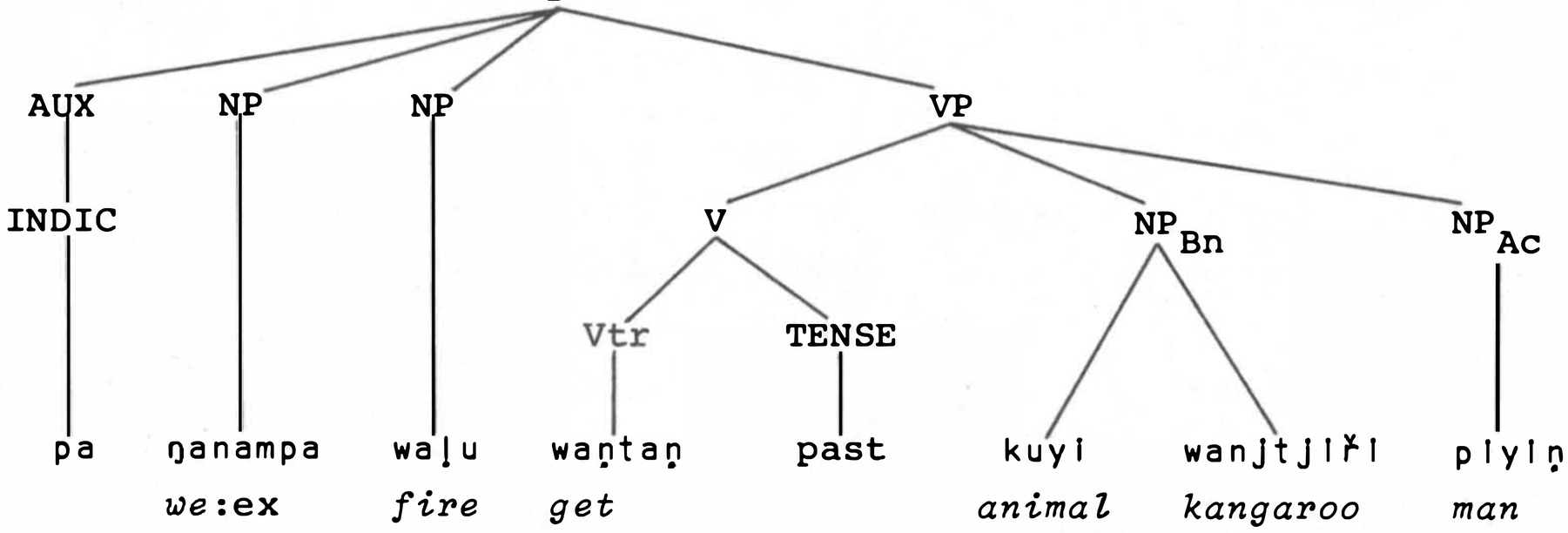
Tense Movement Rule

Tense Movement takes the TENSE node from under AUX and attaches it under the V node. This is the same as the Tense Movement transformation

described in Section 2.

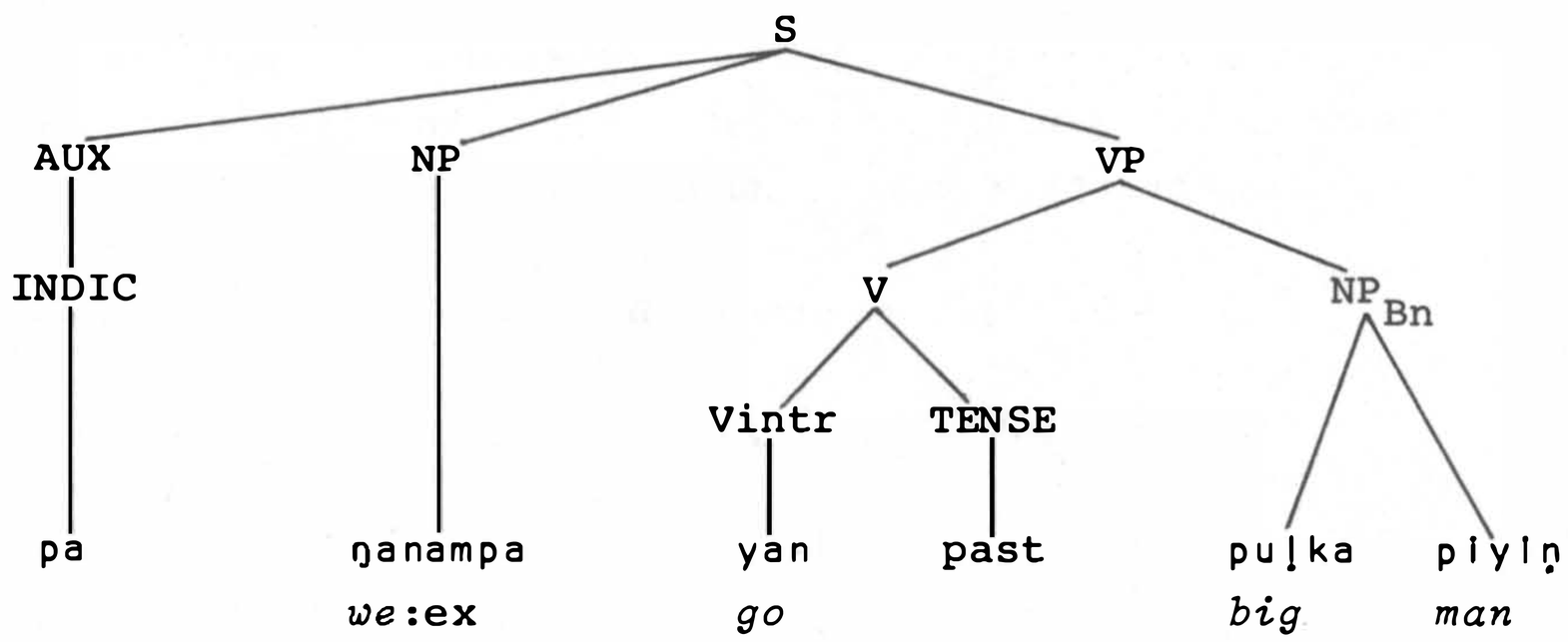
After applying Ergative NP Movement and Tense Movement to Tree 9 we obtain:

Tree 10



It may be helpful at this stage to look at the contrasting tree structure of an intransitive sentence. Note that the Phrase Marker for an intransitive sentence is the same in deep structure whether it be nominative-accusative or nominative-ergative. The example used is sentence (14).

Tree 11



Case Indexing Rule

So far the nominative-ergative deep structure has proved no more complex than the nominative-accusative. It is the Case Indexing transformation which brings in the first complexity as it requires two structural descriptions.

T. Rule (7) Case Indexing

SD_1 AUX + NP + X + $\underbrace{[_{VP}\ Y + NP\ ]_{VP}}$

$\begin{bmatrix}\alpha_{I}\ per\\ \beta_{I}\ num\end{bmatrix}$ $\begin{bmatrix}\alpha_{II}\ per\\ \beta_{II}\ num\end{bmatrix}$

SD_2 AUX + NP + NP + $[_{VP}\ V\ ]_{VP}$

$\begin{bmatrix}\alpha_{I}\ per\\ \beta_{I}\ num\end{bmatrix}$ $\begin{bmatrix}\alpha_{II}\ per\\ \beta_{II}\ num\end{bmatrix}$

1 2 3 4 5

SC ⟹ 1 ≠ $\begin{bmatrix}\alpha_{I}\ per\end{bmatrix}$ ≠ $\begin{bmatrix}\alpha_{II}\ per\end{bmatrix}$ ≠ $\begin{bmatrix}\beta_{II}\ num\end{bmatrix}$ ≠ $\begin{bmatrix}\beta_{I}\ num\end{bmatrix}$ 2 3 4 5

The two structural descriptions are necessary because one description cannot cover all the possibilities of both transitive and intransitive sentences. The first structural description deals with transitive and intransitive sentences in which benefactive noun phrase or accessory noun phrase appears. The second deals with transitive sentences in which no benefactive noun phrase or accessory noun phrase occurs.

In SD_1 the first NP cross-indexed will be ergative if Ergative NP Movement has applied, otherwise it will be nominative. The variable X would then be the nominative noun phrase. The NP dominated by VP which is cross-indexed is either NP_{AC} or NP_{Bn}. This has allowed for the cross-indexing of subject (ergative NP in transitive sentences and nominative NP in intransitive sentences), benefactive and accessory noun phrases in both transitive and intransitive sentences, but it has made no allowance for the object noun phrase to be cross-indexed in a transitive sentence which has neither accessory nor benefactive noun phrase. SD_2 does this by cross-indexing both the ergative noun phrase (subject) and the nominative noun phrase (object).[6]

3.3 *CASE MARKING RULES*

The Case Marking Rules are:

i. The noun phrase immediately left of VP is given nominative case inflection.

ii. Any other noun phrase left of VP is given ergative case inflection.

iii. Noun phrases dominated by VP are given benefactive case inflection if marked NP_{Bn} and accessory case inflection if marked NP_{Ac}.

3.4 *TRANSFORMATIONS INVOLVING TWO SENTENCES*

Further complexities are introduced into the -u¦a Insertion, -u Insertion and -tja: Insertion transformations. The constraint which applies to all three transformations means that they are less concise than those described in Section 2. The constraint is that both sentences must have the same subject regardless of transitivity. Therefore allowance must be made in the structural descriptions for both transitive subject (ergative noun phrase) and intransitive subject (nominative noun phrase). To do this extra variables are necessary in each rule.

T. Rule (8) -u¦a Insertion

SD $\quad [_S\, [_S\, \text{AUX} + \text{W} + \text{NP} + \text{V} + \text{X}]_S + \text{AUX} + \text{Y} + \text{NP} + \text{V} + \text{Z}]_S$

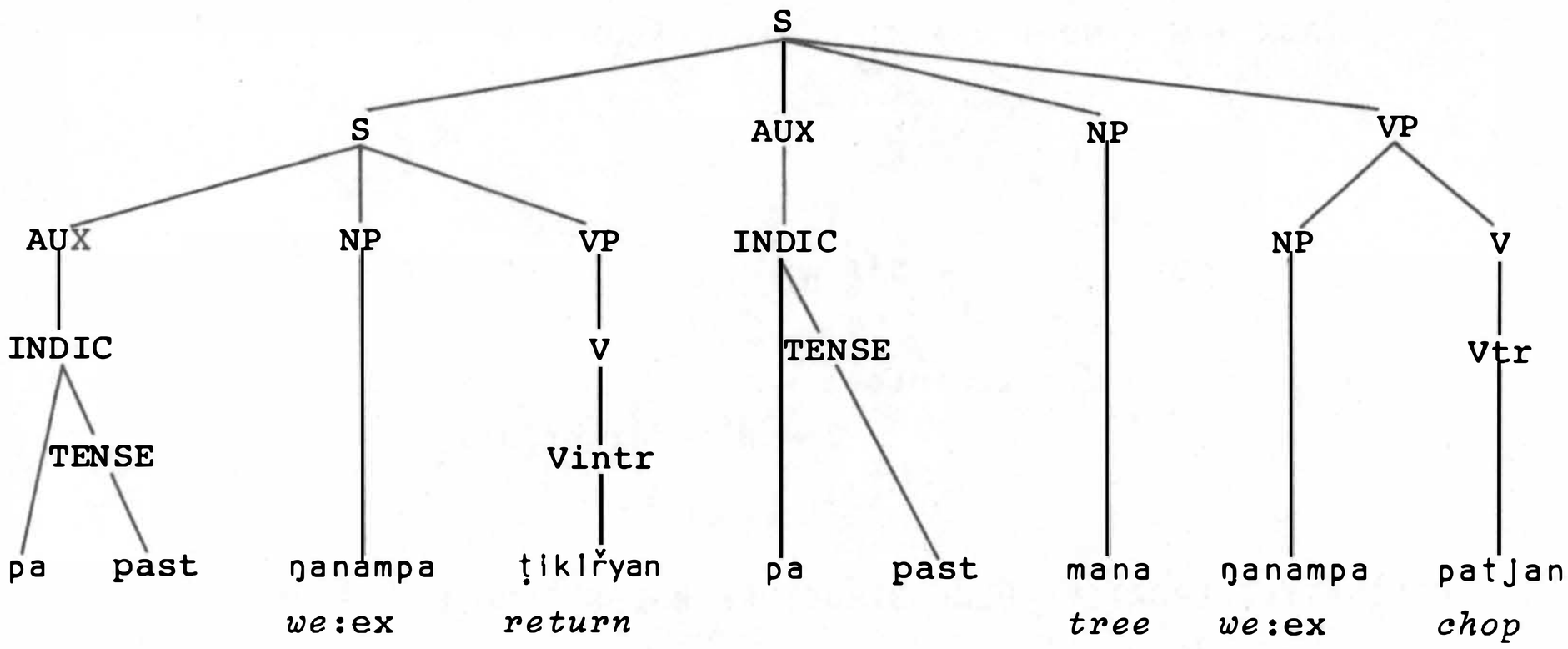
	1	2	3	4	5	6	7	8	9	10
SC ⟹	∅	∅	∅	4 ∔ u¦a	∅	6	7	8	9	10

Constraint 3 = 8 referentially

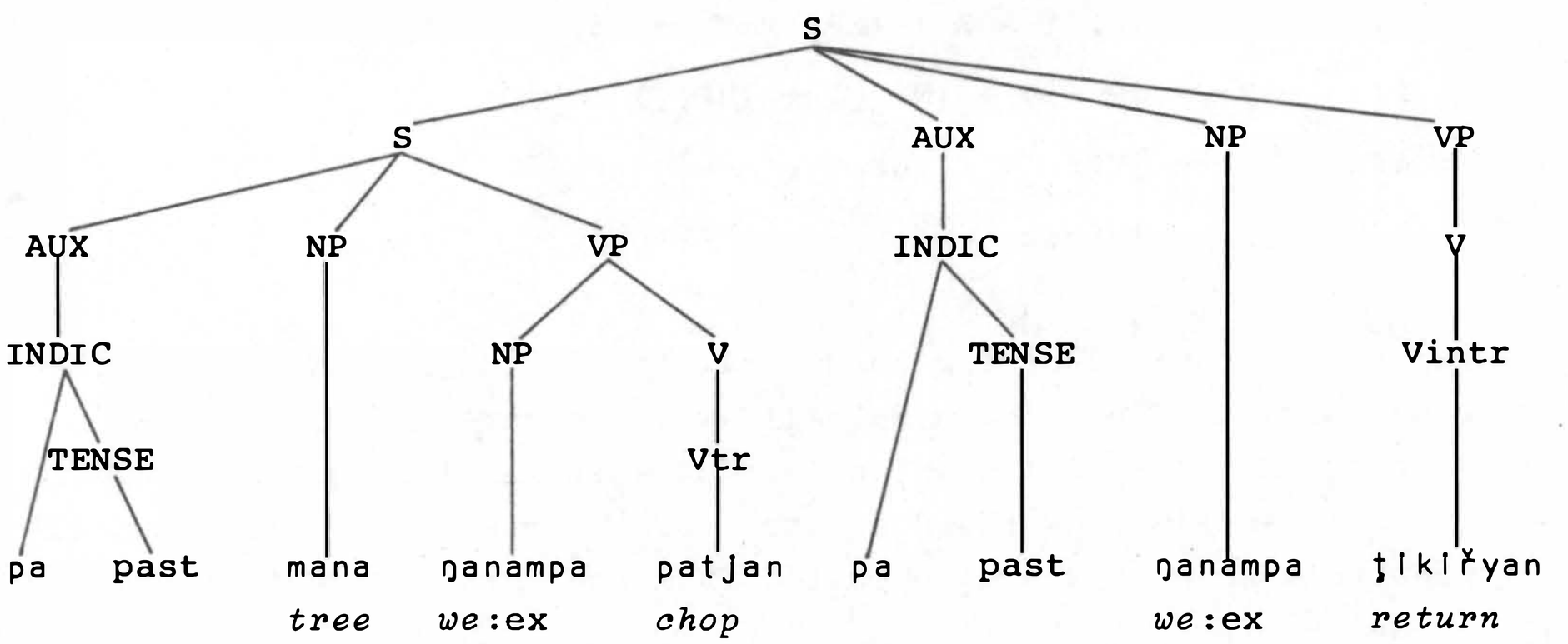
Trees 12 and 13 illustrate sentences (15) and (16) before -u¦a Insertion has applied.

(Trees 12 and 13, and T. Rule (9) - on next page)

Tree 12



Tree 13



T. Rule (9) -u Insertion

SD $S\left[\text{AUX}\left[\text{MOOD} + \text{TENSE}\right]_{\text{AUX}} + U + NP + V + W + S\left[\text{AUX}\left[\text{MOOD} + \text{TENSE}\right]_{\text{AUX}} + Y + NP + V + Z\right]_{S}\right]_{S}$

	1	2	3	4	5	6	7	8	9	10	11	12
SC ⟹	1	2	3	4	5	6	7	∅	9	10	11 + u	12

Constraints 1 = 7
2 = 8
4 = 10 referentially

T. Rule (10) -tja: Insertion

SD $S[\text{AUX} + \text{W} + \text{NP} + \text{V} + \text{X}]_S + S[\text{AUX} + \text{Y} + \text{NP} + \text{V} + \text{Z}]_S$

1 2 3 4 5 6 7 8 9 10

SC ⟹ 1 2 3 4 5≠tja: 6 7 8 9 10

Constraints 1 = 6
3 = 8 referentially

4. NOMINATIVE-ERGATIVE DEEP STRUCTURE RULES TYPE 2

4.1 *PHRASE STRUCTURE RULES*

An alternative nominative-ergative type of deep structure would be generated by rules which include:

i. $S \longrightarrow (S) + AUX + (NP) + VP + (S)$

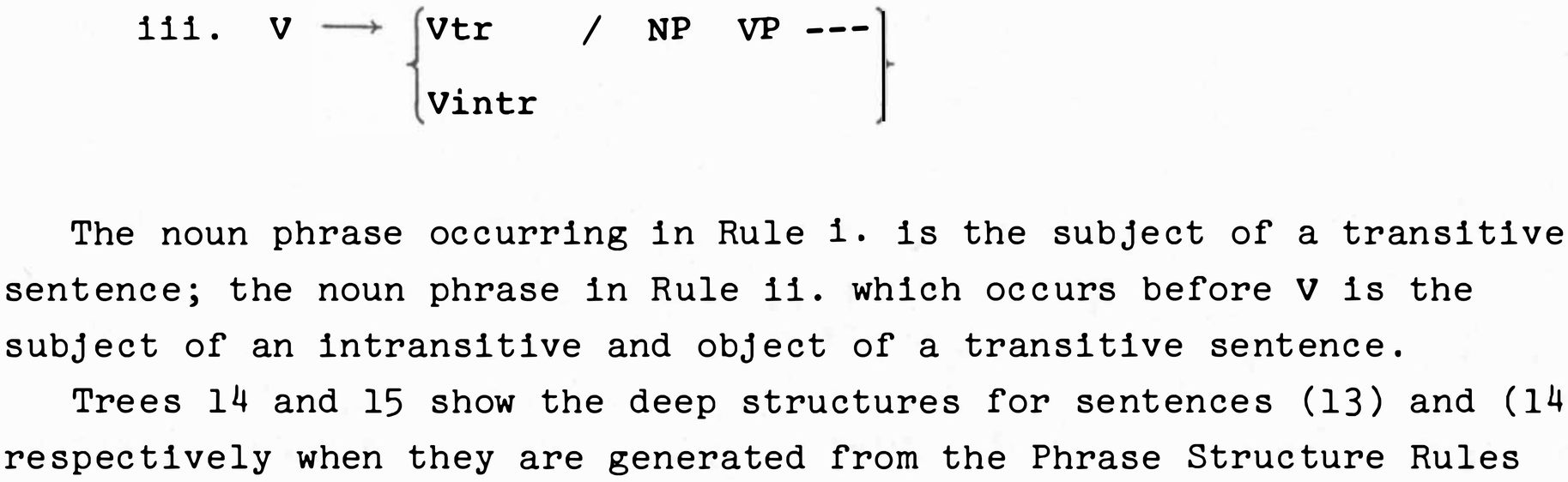
ii. $VP \longrightarrow NP + V + (NP_{Bn}) + (NP_{Ac})$

iii. $V \longrightarrow \begin{Bmatrix} Vtr & / & NP & VP & --- \\ Vintr \end{Bmatrix}$

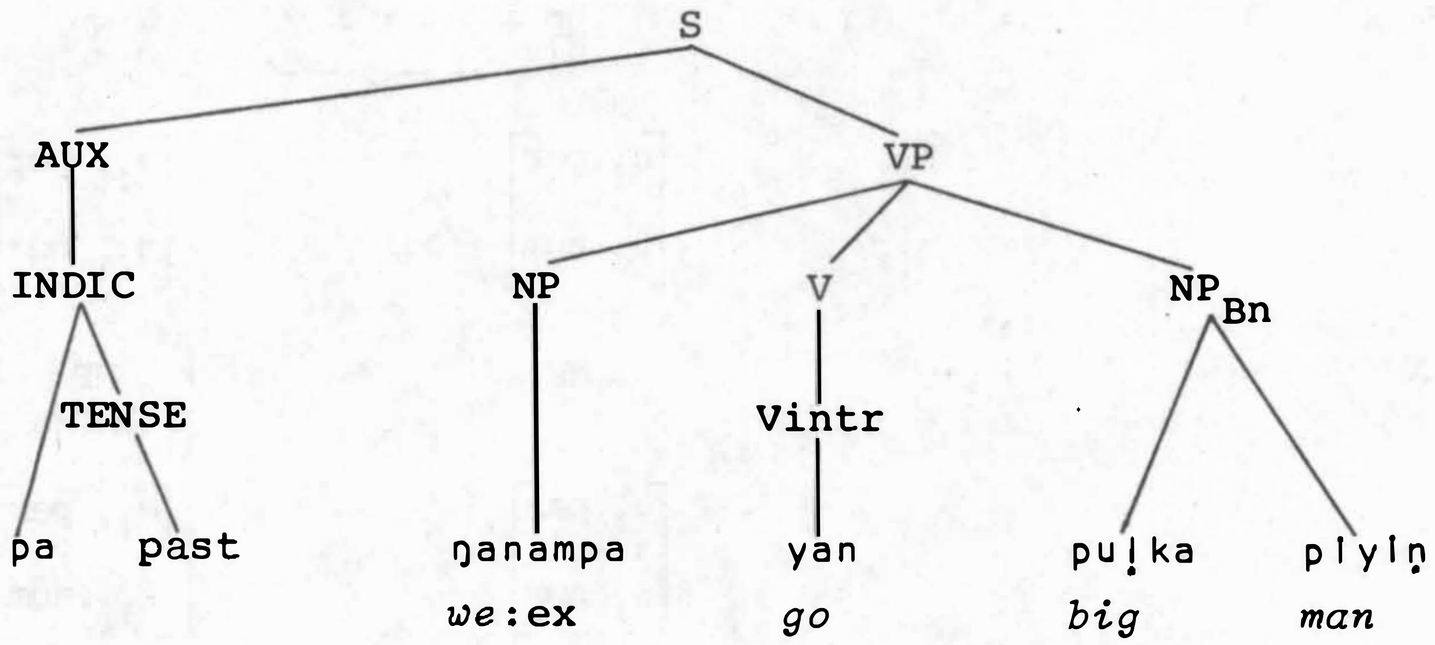
The noun phrase occurring in Rule i. is the subject of a transitive sentence; the noun phrase in Rule ii. which occurs before V is the subject of an intransitive and object of a transitive sentence.

Trees 14 and 15 show the deep structures for sentences (13) and (14) respectively when they are generated from the Phrase Structure Rules given above.

Tree 14



Tree 15



4.2 *OBLIGATORY TRANSFORMATIONS*

The obligatory transformational rules needed to bring sentences from this derivation to the surface structure are Tense Movement and Case Indexing. These two transformations as well as the Case Marking Rules, -uḷa Insertion, -u Insertion and -tja: Insertion transformations are described here briefly, for comparison with Sections 2 and 3.

Tense Movement Rule

As with the Tense Movement transformation described in Sections 2 and 3 this takes the **TENSE** node from under **AUX** and attaches it under the **V** node.

Case Indexing Rule

A statement of two structural descriptions is needed for Case Indexing for nominative-ergative deep structure Type 2 as it was for Type 1.

In the first structural description the first noun phrase cross-indexed may be the subject of either transitive or intransitive sentences. If it is the subject of a transitive sentence (ergative noun phrase) the variable **X** will be the nominative noun phrase. The second noun phrase cross-indexed is the last in the sentence. If both benefactive and accessory noun phrases occur the variable **Y** will be the benefactive noun phrase. This has not allowed for the transitive sentence where the ergative noun phrase (subject) and the nominative noun phrase (object) are both cross-indexed because neither benefactive nor accessory noun phrase occurs. The second structural description is therefore necessary.[6]

T. Rule (11) Case Indexing

SD_1 AUX + NP + X + V + Y NP

$$\begin{bmatrix}\alpha_{\text{I}}\ \text{per}\\ \beta_{\text{I}}\ \text{num}\end{bmatrix} \qquad \begin{bmatrix}\alpha_{\text{II}}\ \text{per}\\ \beta_{\text{II}}\ \text{num}\end{bmatrix}$$

SD_2 AUX + NP + NP + V + NP

$$\begin{bmatrix}\alpha_{\text{I}}\ \text{per}\\ \beta_{\text{I}}\ \text{num}\end{bmatrix} \qquad \begin{bmatrix}\alpha_{\text{II}}\ \text{per}\\ \beta_{\text{II}}\ \text{num}\end{bmatrix}_{\text{VP}} \qquad \text{VP}$$

1 2 3 4 5

SC $\Longrightarrow$ $1 \neq \begin{bmatrix}\alpha_{\text{I}}\ \text{per}\end{bmatrix} \neq \begin{bmatrix}\alpha_{\text{II}}\ \text{per}\end{bmatrix} \neq \begin{bmatrix}\beta_{\text{II}}\ \text{num}\end{bmatrix} \neq \begin{bmatrix}\beta_{\text{I}}\ \text{num}\end{bmatrix}$ 2 3 4 5

4.3 *CASE MARKING RULES*

The case marking rules for this second type of nominative-ergative deep structure are:

i. The noun phrase left of V and dominated by VP is given nominative case inflection.

ii. Any noun phrase directly dominated by S is given ergative case inflection.

iii. Noun phrases dominated by VP are given benefactive case inflection if marked NP_{Bn} and accessory case inflection if marked NP_{Ac}.

4.4 *TRANSFORMATIONS INVOLVING TWO SENTENCES*

T. Rule (12) -u¦a Insertion

SD $[_S[_S$ AUX + NP + X + V + Y $]_S$ + AUX + NP + Z $]_S$

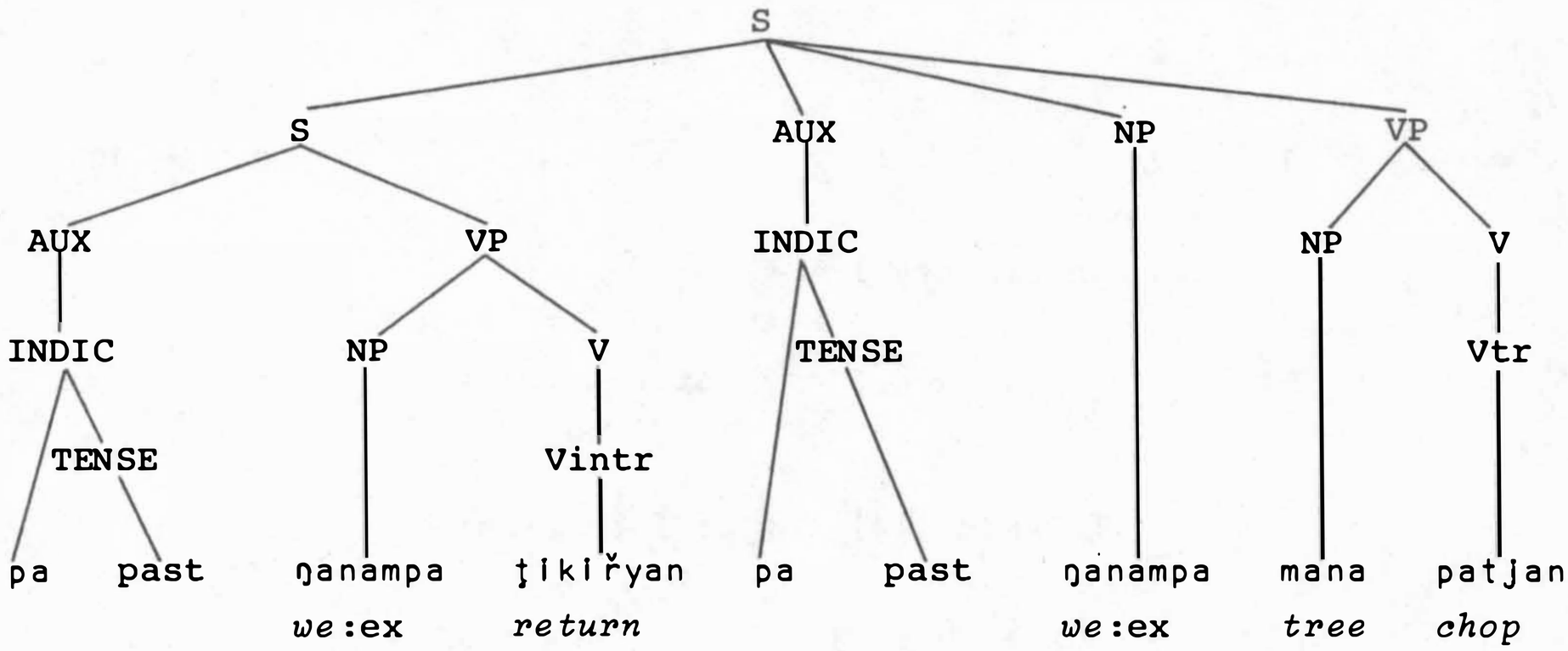
1 2 3 4 5 6 7 8

SC $\Longrightarrow$ Ø Ø Ø $4 \neq$ u¦a Ø 6 7 8

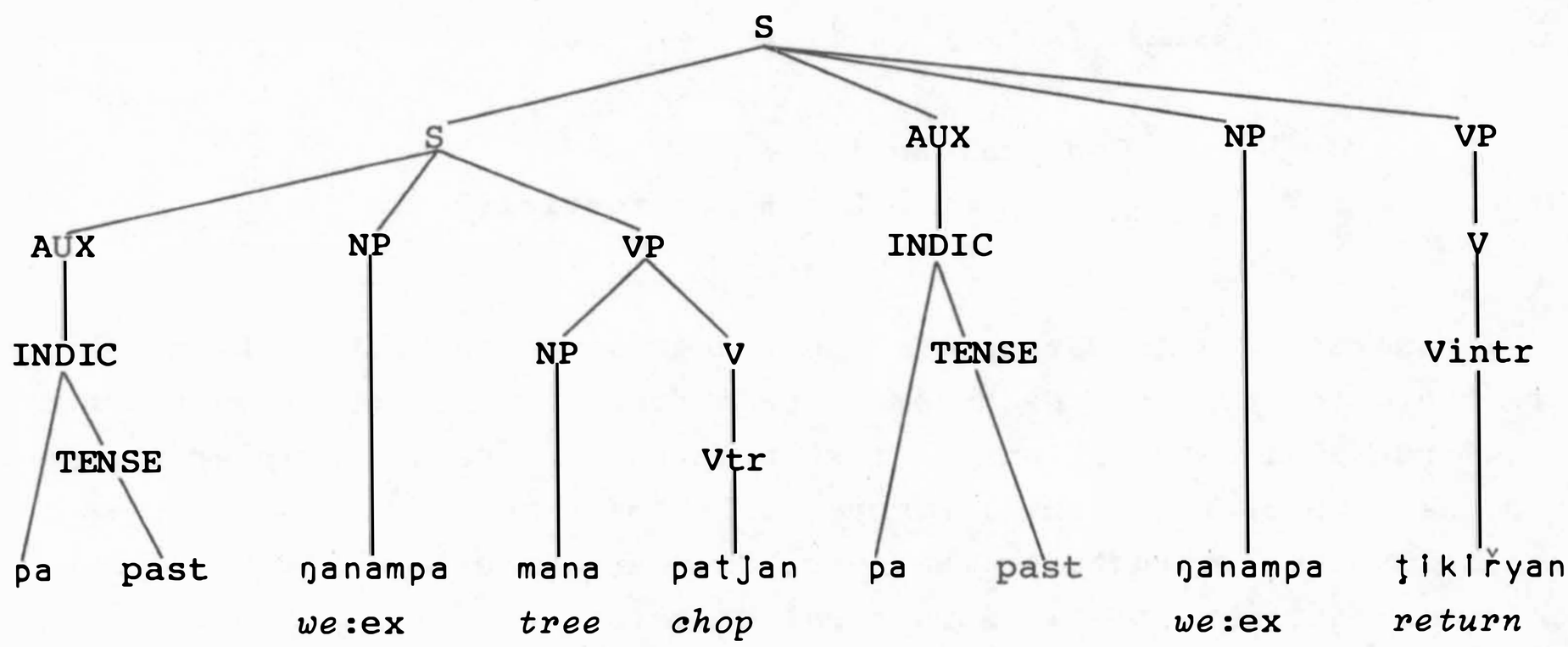
Constraint 2 = 7 referentially

Trees 16 and 17 illustrate sentences (15) and (16) before -u¦a Insertion has applied.

Tree 16



Tree 17



T. Rules (13) and (14) overleaf.

T. Rule (13) -u Insertion

SD $S[\,AUX[\,MOOD + TENSE\,]_{AUX} + NP + W + S[\,AUX[\,MOOD + TENSE\,]_{AUX} + NP + Y + V + Z\,]_S\,]_S$

1 2 3 4 5 6 7 8 9 10

SC ⟹ 1 2 3 4 5 ø 7 8 9≠u 10

Constraints 1 = 5
2 = 6
3 = 7 referentially

T. Rule (14) -tja: Insertion

SD $S[\,AUX + NP + X\,]_S + S[\,AUX + NP + Y\,]_S$

1 2 3 4 5 6

SC ⟹ 1 2 3≠tja: 4 5 6

Constraints 1 = 4
2 = 5 referentially

The advantages in favour of Type 2 deep structure rather than Type 1 are that, (a) Ergative NP Movement transformation is not necessary and (b) structural descriptions in most transformations are simpler though generally these still involve more variables than those in the nominative-accusative deep structure. However, the Case Indexing Rule still requires a statement of two structural descriptions.

CONCLUSION

Five transformations have been presented which require the subject of a transitive sentence (ergative case) and the subject of an intransitive sentence (nominative case) to function as a single constituent but no transformation has been found which requires the nominative noun phrase (subject of an intransitive sentence and object of a transitive sentence) to function as a single constituent.

A comparison of rules given in Section 2 with those in Sections 3 and 4 shows that the necessary transformational rules have a significantly simpler statement with a nominative-accusative base than with either type of nominative-ergative base. However, to bring the sentence from deep to surface structure one less transformation is necessary with nominative-ergative Type 2 base than with either of the others.

The evidence is perhaps insufficient to prove conclusively that the deep structure of Walmatjari is of the nominative-accusative type but a simpler description of the overall grammar is certainly possible if the deep structure is assumed to be nominative-accusative.

ABBREVIATIONS AND NOTATIONS

*	An ungrammatical sentence. Late phonological rules have yet to apply
≠	morpheme break
1	1st person
2	2nd person
3	3rd person
ex	exclusive
in	inclusive
per	person
num	number
sg	singular
du	dual
pl	plural
Sb	subject
Ob	object
Bn	benefactive
Ac	accessory
Nom	nominative
Erg	ergative
Acc	accusative
Loc	locative
INDIC	indicative
IMPER	imperative

refl	reflexive
AUX	auxiliary
S	sentence
NP	noun phrase
VP	verb phrase
V	verb
tr	transitive
intr	intransitive
TENSE	tense
SD	structural description
SC	structural change
T. Rule	transformational rule
Q U W X Y Z	Variables - with X, Y and Z being used wherever possible and W, U and Q appearing only when more than three variables are needed.

NOTES

1. Walmatjari is the main language spoken along the Fitzroy River in the north of Western Australia. Many of the speakers live on cattle stations along the Fitzroy River while others live in the towns of Fitzroy Crossing and Derby. Some live as far east as the Halls Creek district and a closely related dialect is spoken as far west as La Grange Mission.

The data for this paper was collected at Fitzroy Crossing under the auspices of the Summer Institute of Linguistics by the author and Miss Eirlys Richards between September 1967 and August 1971.

The enthusiastic help given by many of the Walmatjari-speaking people has been of prime importance in the collection of this data and has led to some very good and lasting friendships.

I also wish to acknowledge the generous help of Professor R.M.W. Dixon of the Linguistic Department of the Australian National University who has helped me in the understanding of the generative theory behind this analysis as well as in the actual analysis and writing of this paper.

This paper was prepared with the assistance of a concordance of 90-100 pages of text in Walmatjari produced by a joint project of the Oklahoma University Research Institute and the Summer Institute of Linguistics which was partially supported by Grant GS-1605 of the National Science Foundation.

2. This is not the final form of the sentence. A late phonological rule deletes the auxiliary root pa- when it is immediately followed by a morpheme beginning with the letter p. The final forms of the auxiliary in sentences (10) and (12) are therefore pɭa-nja and pɭa respectively.

3. As many as five morphemes can be suffixed to the auxiliary root. The first four specify the person and number of subject and accessory/benefactive/object. In more detail they are:

1st Order subject person
2nd Order accessory/benefactive/object person
3rd Order accessory/benefactive/object number
4th Order subject number.

The 3rd Order suffix has two paradigms, one which refers to benefactive number and another which refers to object number. When accessory noun phrase appears in the sentence it can choose either of these paradigms. To signal that this 3rd Order suffix is referring to accessory and not to benefactive or object a 5th Order suffix -ḻa is added. No attempt has been made in this paper to write rules covering the suffix -ḻa.

In clauses where only subject is cross-indexed, 1st and 4th Order suffixes only occur in the auxiliary.

4. The ditransitive verb is not included here as it does not bear on the issues considered in this paper. There is only one ditransitive verb root, yuŋ- *'give'*, which shows a number of syntactic and morphological irregularities.

5. This is not the final form of the sentence. Late phonological rules applied to the auxiliary make certain morphological changes and alter the order of some of the morphemes. The factors causing these changes are not dealt with in this paper. For the sake of simplicity all examples in the paper are given with suffixes in the auxiliary in their deep structure orderings. The late rules will apply to the auxiliary in sentences (13), (14), (15) and (17) so that the surface forms will be:

(13) ma-ṇa-lu-njanaŋu-ḻa
(14) ma-ṇa-lu-pllaŋu
(15) ma-ṇa-lu-nja
(17) pa-lu-ḻa

The auxiliary is preferred as second constituent of the sentence but otherwise word order is fairly free. This freedom of word order does not affect the meaning of the sentence.

6. In the intransitive sentence (8),

yani	ma-ṇa-lu	ŋanampa-Ø
went	**INDIC-Sb:1:ex-Sb:pl**	*we*:**ex-Nom**

'We all (exclusive) went.'

the auxiliary root is followed by only two morphemes: person and number of the subject. This sentence type is not included in the Case Indexing Rule of any of the analyses presented since it does not affect the issues considered in this paper. The Case Indexing Rule, in each analysis, would require an extra structural description of **AUX + NP + Vintr.**

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INTERPENETRATION OF STRESS AND PITCH IN WIK-MUNKAN GRAMMAR AND PHONOLOGY

BARBARA J. SAYERS

0. INTRODUCTION

Wik-Munkan is an Australian Aboriginal language spoken in the area of the Archer River in the Cape York Peninsula, Queensland, Australia.[1] It is classified as Pama-Nyungan Family, Pama-Maric Group, Middle Paman Sub-group (O'Grady, Voegelin and Voegelin 1966:54) and is spoken as either the first or second language of the 700 people who live at Aurukun on the Archer River.

S. A. Wurm (1972:16,17) quotes the early writer Schmidt (1919) as postulating that the Northern Australian languages were unrelated to each other and to the remaining part of the continent. Wurm also quotes Kroeber (1923) who, while recognizing the linguistic unity throughout the continent, still admitted that in Northern Australia there was much less linguistic homogeneity than in the south and that even adjacent languages often differed profoundly in the north. Ursula McConnel (1945) spoke of the abrupt linguistic and cultural change which extended right across the Peninsula north of the Archer River.

More recently, Kenneth Hale (1964) has indicated that he believes the changes in the Northern Paman languages immediately north of the Watson River (just to the north of the Archer River) are only superficially deviant owing to phonological development peculiar to them. He also points out (in an unpublished manuscript) that Linguistic has predominantly monosyllabic morphemes and that this feature, while rare throughout the rest of Australia, is shared with other languages of the northern Paman family spoken further south in the Peninsula. Wik-Munkan is included in the languages which feature predominantly monosyllabic morphemes.

The inventory of segmental phonemes in Wik-Munkan is typical of Australian Aboriginal languages in general (O'Grady, Voegelin and Voegelin 1966) and only varies from Proto Paman (Hale 1964:225) by the addition of glottal stop and the further two vowel phonemes /e/ and /o/. The Wik-Munkan inventory is as follows:

	bi-labial	inter-dental	apico-alveolar	lamino-palatal	velar	glottal
stops	p	t̪	t	tj	k	ʔ
nasals	m	n̪	n	nj	ŋ	
lateral			l			
flap			ɾ			
semi-vowels	w		ɹ	y		

	front	central	back
high	i,i:		u,u:
mid	e,e:		o,o:
low		a,a:	

There is, however, considerable phonological divergence in Cape York, and this could have influenced the early writers in their assumptions about Cape York languages. For example, Kunjen (Sommer 1969) which has no glottal stop or vowel length but has three fricatives; Gogo-Yimidjir (de Zwaan 1969) which has no glottal stop; and Mabuiag (Simpson 1971) has no inter-dentals, no glottal stop, but has fricatives, and no vowel length. The Northern Paman languages have their own peculiar phonological development which includes pre-nasalised stops, nasalisation of vowels and a voiced fricative series. These phonological innovations clearly distinguish them from the Wik languages (Hale 1964:251).

As well as inventory difference, the slower staccato type speech of Wik-Munkan with its short words and its obvious pitch changes related to marked stress patterns contrasts with languages which have fast flowing speech with less marked stress patterns. While there are many contrastive stress patterns for Wik-Munkan words, strong structural pressure is exerted by the pattern which I have called *Normal Rhythm*. This same pattern is described by Dixon (1972:274) for Dyirbal words as the 'preferred' stress pattern. In both languages the first syllable is stressed and there is one and only one unstressed syllable between each successive stressed syllable.

While Wik-Munkan sounds 'different' from other languages in the Cape York area and from those elsewhere throughout Australia, it fits into the over-all Australian phonological system.

The analysis of Wik-Munkan stress and pitch has caused the author considerable difficulty. The first difficulty was initial failure to recognize the grammatical significance of stress/pitch changes (first pointed out for tense distinctions by Kenneth Hale in personal communication). This lack of recognition was due to the fact that the same phonetic phenomena functions differently between different suffix classes which are defined by stress. With suffix classes such as those which include tense there is contrast between morphemes which is shown only by stress distinctions while with another suffix class these same stress differences are only stress-conditioned allomorphs.

Once the contrastive nature of stress was recognized, problems remained from a phonological viewpoint as the stress contrasts were asymmetrical. It was only when the grammar was considered in the analysis that these gaps could be adequately accounted for. From the grammatical viewpoint the lack of symmetry in contrasts can be accounted for within the grammatical structure as the pressure of certain affix classes overrides Normal Rhythm.

The analysis uses the Tagmemic model which is hierarchical in approach (Pike 1947) with the hierarchy being handled in descending order. This analysis, however, differs from Pike's model in that grammar is handled as it relates to each level of the phonology hierarchy. Some levels of the hierarchy such as the Foot and the Syllable have been analysed following Grimes' model (1969).

This paper is presented in two parts. Part I (Intonation) handles the analysis of the Phonological Clause, the Phonological Sentence and Intonation. It covers contrastive height and placement of both P-clause and P-sentence stress and predictable features of speed and pitch in the body of both P-clauses and P-sentences. Twenty-six contrastive intonation patterns are described in relation to their phonological components and their grammatical usage.

Part II, which is to follow, covers the following levels of the phonological hierarchy: the Word, the Foot, the Syllable and the Phoneme.

The data was collected during residence at Aurukun between 1962 and 1973, under the auspices of the Summer Institute of Linguistics.[2]

I greatly appreciate the consultation and editorial help of Eunice Pike and Alan Healey and other co-workers in the Summer Institute of Linguistics. Thanks are also extended to the Wik-Munkan speakers at Aurukun who have helped in various ways. These helpers include Hazel Chevathan, Geraldine Kawangka, Winnie Koongotema, Topsy Wolmby and Maud Yunkaporta.

My co-worker, Christine Kilham, is undertaking further detailed work towards a Ph.D. in Linguistics. Her thesis topic is 'The Thematic Organization of Wik-Munkan' which includes such features as the relevance of pitch to new information and thematic development. Her encouragement and comments have been most helpful.

1. PHONOLOGICAL CLAUSE

Wik-Munkan intonation is most easily described by first considering how it is related to the rhythm wave which is here called *the Phonological clause* (P-clause).

A P-clause consists of one or more words grouped together by having a single clause-stress, an intonation pattern, and certain predictable features of pitch and speed. It is normally bounded by pauses, but in the middle of certain merged sentences pause does not occur.

In describing the P-clause it is convenient to regard it as composed of two sections. The body consists of all but the last syllable or last half-syllable of the P-clause. Grammatically, it is the lexical part of the P-clause. The terminal is the last syllable if that syllable is an 'intonation carrier' clitic, or is the last half of the last syllable if no 'intonation carrier' clitic occurs.

1.1 *CONTRASTIVE CLAUSE STRESS AND GRAMMAR*

Within the body of the P-clause there is one syllable with a peak of prominence, called *clause-stress*, which is perceived as being louder and higher in pitch than that of other syllables in the P-clause.

In Wik-Munkan the placement of clause-stress (marked by °) is phonologically unpredictable and therefore contrastive. In many of the examples cited below, the clause-stress is also sentence-stress and is then marked by °°. (All other symbols are listed in Section 3.2.).

(1) / púk ŋáṯařàmàn °°pí:ʔan-#[1]
*child my:*foc *big*-int
'My child is big.'

(2) / púk °°ŋáṯařàmaŋ pí:ʔan-#[1]
*child my:*ts *he:minds:it*-int
'My child minds it.'

The placement of clause-stress, however, is predictable in terms of the grammar of the body of the P-clause.

(a) In a clause containing a verb, clause-stress normally occurs on the tagmeme preceding the verb, either transitive (3) or intransitive (4).

(3) / pám pí:ʔan °°ʔánpàl wámpìn-#[1]
man big from:there:to:here they:came-int
'The important men came from there to here.'

(4) / pám ʔálaŋàn °°kúʔ pí:k-#[1]
*man that:*ts *dog he:hit*-int
'That man hit the dog.'

(b) When a content-interrogative clause contains a verb, the clause-stress occurs on the interrogative pronoun which frequently precedes the verb.

(5) / nínt °°wántìnàk ʔí:yan-a[2]
you where:to you:go-int
'Where are you going?'

(6) / °°ŋé:naŋ púkaŋ wúnp-#[2]
what:on child-ts *he:put*-int
'What did the child put it on?'

(c) If the verb is preceded only by a subject pronoun and is followed by only a non-subject pronoun, clause-stress occurs on the verb.

(7) / nít °°pí:k t̪ánaŋ-#[1]
he he:hit them(all)-int
'He hit them.'

(8) / nít °°t̪áw púlant-#[1]
he he:said to:them(two)-int
'He said to them.'

(d) In desiderative mood, clause-stress occurs on the verb to which the 'intonation carrier' clitic -è: or -à: is attached.

(9) ↑ kán °°wá:ʔàn-à:[31<>]
punct *you:tell:me:about:it*-int
'I wish you would tell me about it.'

(10) ↑ pál °°kútjìn-è:[31<>]
to:here you:would:send:it-int
'I wish you would send it here.'

(e) In an Inverted-Sequence Sentence, the clause-stress occurs on the verb in the *Consequent Action tagmeme*, thus putting focus on this verb which is out of chronological order.

(11) *Cons Act:* / nípʰ °ʔí:yùw-à?[3] *Ant Act:* / kúlìtj
you(two) you(two)went-int *clothes*
kà:ʔát̪am °°kánàn púŋùw-#[1]
first punct:foc *you(two)washed*-int
'You two went after you had washed the clothes.'

(f) In a Future Result Sentence, the clause-stress may occasionally occur on the future/infinitive verb in the *Future Result tagmeme*.

(12) *Text*: / ŋán-wèy °°ʔín wámpan-a¹ *Fut Res*: / ʔá:k
*we:*emo *here* *we:came*-int *place*
núŋkařàm ʇáʔaŋ °má:kàn-#¹ *Fut Res*: / wík
yours *foot:with* *to:tread*-int *words*
°mámàn núŋkařàm-#¹
we:to:hold *yours*-int
'We came here to live at your place and to learn your language.'

(g) In non-verbal clauses the clause-stress occurs on the non-verbal predicate. This rule still holds in a content-interrogative non-verbal clause whether or not the interrogative pronoun is final.

(13) / ŋáy ká? kù?°°wá:kant-a¹
I *like* *cat:*ref-int
'I thought it was a cat.'

(14) / pám wé:?àn °°mín-a²
man *who:*foc *good*-int
'What man is good?'

(15) / pám mín °°wé:?àn-a²
man *good* *who:*foc-int
'Who is the good man?'

(h) When the function morphemes yá? (non-verbal negative/verbal intensifier), ké? (verbal negative), and yá?aŋàm (frustration marker) occur they take clause-stress.

(16) ↕ máy ?ín mín °°yá?-#¹
food *this* *good* *not*-int
'This food is terrible!'

(17) / ŋáy pút °°yá?aŋàm yúk mánj ʇák kí:ŋk-kì:ŋkaŋ-#¹
I *but* *to:no:avail* *sticks* *small* *etc.* *I:cooked*-int
/ ŋánaŋ mé?aŋ °wář?àm má:yan-#¹
us *mosquitos:*ts *almost* *picked:up*-int
'To no avail I burned small sticks etc., still the mosquitos almost picked us up (carried us away).'

(18) .../ níl °pétj-pètj-#¹ ↕°°yákkày-#¹ / wèntj-ʈá:?
she *she:cried*-int exclam-int *sores:bad*

°pótj-a?³ ↕ kékaŋ °ké? púŋàn ŋáyaŋ-a?³
sore-int *spear:with* neg *you:spear* *me*-int

↕°yá?aŋàm ʈáw-ʈàw-#¹
to:no:avail *she:said*-int

'...she cried out "yakkay, my sores are very sore. Don't spear me with a spear". But she said it to no avail.'

(i) In a Simile Sentence, when a negative does not occur, clause-stress occurs on the word preceding the similarity markers yímanàŋ or ?ánmàn *'in like manner'*, thus focusing on the item of similarity. If the similarity marker is the first word in the P-clause, the marker receives clause-stress, thus focusing on the similarity itself.

(19) driver ↑°ʈón ?álaŋànìy-a?³ / ŋàk-°wáy múŋk-#¹
driver *one* *that:one:*ts-int *beer* *he:drank*-int

/ ?án ká? níl °°kó?antj yímanàŋ njí:n-njì:n-#¹
that *like* *he* *blind* *in:like:manner* *he:sits*-int

'One driver had drunk beer and it was just as if he was blind.'

(20) .../ ká? ká:ntj °mínàn ké:kan-#¹ ?á:k ŋá:n̰
like *seed* *good:*foc *it:falls*-int *place* *sand*

°mínaŋàn-#¹ °yímanàŋ ?í:yàn-#¹
*good:in:*foc-int *like:manner* *he:will:go*-int

'...like the good seed fell on the good ground — we will behave in that manner.'

(21) .../ ká? ká:ntj °mínàn ké:kan-#¹ / pál-pù:yàn-#¹
like *seed* *good:*foc *it:falls*-int *here:there:*foc-int

/ ŋá:n̰ °mínaŋàn-#¹ / ŋá:n̰ kúntòwaŋ ké:kan-#¹
sand *good:in:*foc-int *sand* *stony:in* *fell:it*-int

↕ yímanàŋ °°yá?-#¹
in:like:manner *not*-int

'...like good seed that falls here and there on good ground, not like seed that falls into stony ground.'

(j) In the first clause of a Like Merged Sentence, when a negative does not occur, clause-stress occurs on the irregular verb ká:ŋk *'like'*.

(22) / nít °ká:ŋk-#³ ≠ /°wáɬ̩ìy múŋkòw-#¹ / púl °míɲaŋ-#¹
he likes-int *yams to:eat*-int *and meat*-int
'He likes eating yams and meat.'

(23) ↕ ŋáy ká:ŋk °°ké?-#³ ≠ / kà:?°pátʃ ?ánaŋàn-#¹
I like neg-int *white-nose them*-int
'I don't like white people!'

1.2 *PREDICTABLE PITCH IN THE BODY OF A P-CLAUSE*

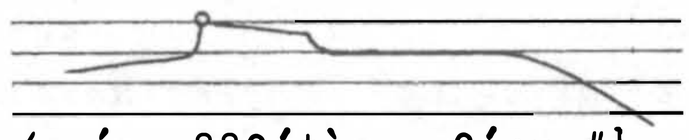
In the body of the P-clause the word stresses become successively higher in pitch until the peak of prominence is reached. This is clause-stress and on this syllable word-stress and clause-stress coincide. Following clause-stress, pitch usually drops sharply until it reaches the final syllable of the lexical part of the P-clause.

The pitch of the syllable carrying clause stress is phonologically conditioned by the consonants in that syllable.

The shape of stressed syllables in Wik-Munkan is CV(:)C(C)(C), that is, the basic pattern is CVC with optional length on the vowel nucleus and the possibility of the coda being filled by up to three consonants. There are restrictions as to the classes of consonants which fill each C of the coda. When both the onset consonant and the first consonant of the coda are voiceless, the pitch of the clause-stress is highest. When one of the two consonants is voiceless and the other voiced, the pitch of clause-stress is mid height. When both these consonants are voiced, the pitch of clause-stress is lowest.

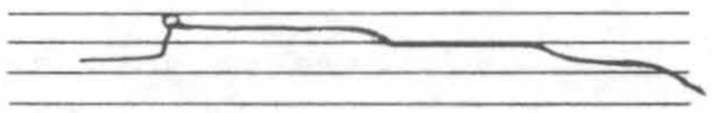
The following examples where the relative pitch height is shown by contour lines demonstrate the differences in pitch height.

(24)



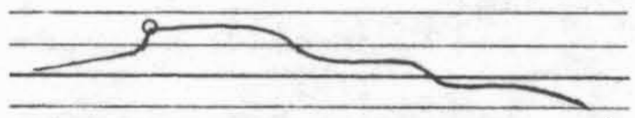
/ pám °°?ítàm ?í:y-#¹
man slowly went:he-int
'The man went slowly.'

(25)



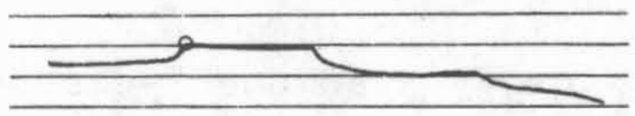
/ pám °°?éřkam ?í:y-#¹
man quickly went:he-int
'The man went quickly.'

(26)



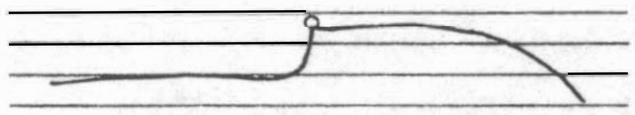
/ pám °°mítjam ké:?-#[1]
man supple danced:he-int
'The man danced well (in a supple manner).'

(27)



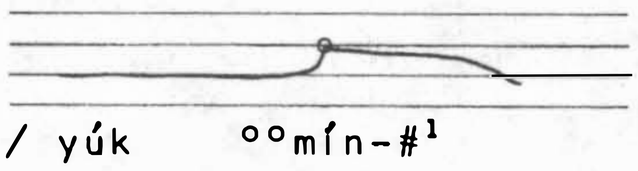
/ pám °°mínam ké:?-#
man well danced:he-int
'The man danced well.'

(28)



/ yúk °°mítj-#[1]
thing soft-int
'A soft thing.'

(29)



/ yúk °°mín-#[1]
thing good-int
'A good thing.'

The pitch of clause-stress in a P-clause with general pitch elevation and compressed pitch range is less clearly perceived since the range of pitch is minimal. It is more clearly perceived as extra loudness.

1.3 *PREDICTABLE SPEED IN A P-CLAUSE*

In any P-clause one of three possible speeds occurs. These contrastive speeds inter-relate with contrastive levels and ranges of pitch.

(a) Intonation patterns with a neutral pitch (/) or an elevated compressed pitch (↑) have somewhat slow even timing throughout, according to various patterns discussed later (see *The Foot* in Part II of the paper).

(b) Patterns with an expanded pitch range (↕) have a clause-stressed syllable which is optionally greatly lengthened. Syllables preceding the clause-stressed syllable are somewhat faster but are evenly timed.

The syllables following the clause-stressed syllable are very fast and together occupy about the same time as the syllable with clause-stress.

(c) Patterns with a lowered pitch (↓) have the somewhat faster and even timing of the pre-peak part of an expanded pattern (↕), but this speed is carried throughout the whole P-clause.

1.4 *PHONOLOGICAL CLAUSE AND GRAMMATICAL CLAUSE*

One grammatical clause (G-clause) is usually also one P-clause. Under certain circumstances, however, one G-clause may be two or more P-clauses:

(i) If the subject, object, benefactive or indirect object contains a co-ordinate serial list, each item in the list is a P-clause and the remainder of the G-clause (including a pronoun summarizing the list) is also a separate P-clause. For the most part, each of its P-clauses has the intonation pattern /...-à?^{3}; if the list occurs after the verb, each of its P-clauses has either /...-à?^{3} or /...-#^{1} (clause-stress roughly even on pre-posed Summarizing P-clause).

(30) /ºŋáy-à?^{3} /ºníNt-à?^{3} /ºTopsy-à?^{3} /ºŋámp ʔíːyamp-à$^{31<>}$
I-int *you*-int *Topsy*-int *we(all)* *we:went*-int
'Topsy, you and I all went, didn't we?'

(31) / níl míŋ ʔínaŋàn ººpál kál ʈánaŋ-#^{1} míŋ
he *fish* *these* *to:here* *carried:he* *them*-int *fish*
ºpúːy-à?^{3} / míŋ ká?aŋʈ-à?^{3} ↓ míŋ wúːŋkam-#^{1}
crab-int *fish* *catfish*-int *fish* *barramundi*-int
'He brought home these fish; crabs, catfish and barramundi.'

(32) / ʈán ººʈánt ʈéːʔìn-#^{1} /ºkáːt-kùnjtjant-#^{1}
they *to:them* *they:gave*-int *to:the:real:mother*-int
/ºpíːp-kùnjtjant-#^{1} /ºpúk-kùnjtjant-#^{1}
to:the:real:father-int *to:the:real:child*-int
'They gave (it) to them; to the mother, the father and the child.'

(ii) A 'Sentence Topic' is analyzed as part of the first G-clause of a sentence.[3] It consists of either a noun phrase or of two or more noun phrases in apposition. Each such noun phrase is a P-clause with the intonation pattern ↑...-à?^{3}, and the remainder of the G-clause (which may include a pronoun representing the topic) is a further separate P-clause.

(33) ↑°nánpàlànìy-à?^{3} ↑°Tariri?ànìy-à?^{3} ↕ níl ŋàŋk-mín °°yá?-#^{1}
after:that-int *Tariri:that*-int *he* *happy* *not*-int
'After that Tariri was not happy.'

(iii) In an emphatically negative verbal sentence ké? occurs (with clause-stress) as the normal negative particle before the verb and yá? occurs at the end of the G-clause and constitutes a separate P-clause by itself and takes both clause and sentence-stress. There is rarely a pause between these two P-clauses.

(34) ↕ ŋáy ká:ŋk ké? múŋkàŋ ʇánaŋ-#^{1} ≠ ↕°°yá?-#^{1}
I *like* neg *eat:I* *them*-int *no*-int
'I really don't like eating them!'

(iv) When a polite question is asked by a person of the younger generation, the last word of the G-clause is the question particle ?éy which constitutes a separate P-clause from the preceding part of the G-clause. It has its own clause-stress, but never takes sentence-stress.

(35) ↑ nínt °°ké? yálkam pékìř-#^{2} ≠ /°?éy-#$^{12<}$
you neg *shake:a:leg* *dance:for:me*-int Q-int
'You wouldn't dance "shake a leg" for me, would you?'

(v) The conjunction ?á? always constitutes a P-clause by itself and always has the same intonation pattern. It may be described in either of two ways:

(a) as the conjunction ?á? plus the pattern ↕...-#^{3} with the P-clause commencing with low pitch, ↕°?á?-#^{3} or,

(b) as the conjunction ? plus the pattern ↑...-à?^{3}, with the secondary stress becoming primary stress by default and with the P-clause commencing with extra low pitch ↑°?-à?^{3}.

The first analysis has been used in the examples in this paper.

(vi) In an equational or stative clause, having any one of certain intonation patterns ending in -#, -èy, -à, or -àw, -a is attached to the subject which is the first tagmeme of the clause. This subject could perhaps be regarded as being a separate P-clause with the intonation pattern / ...-a^{1}. There is, however, absence of pause (symbolized ≠) between the two tagmemes.

(36) /°?ín-a^{1} ≠ /°°mín-#^{1}
this-int *good*-int
'This is good.'

Alternatively, it could be regarded as a non-phonemic open transition between the two tagmemes within a single P-clause.

(37) / ʔín °°min-#[1]
this good-int
'This is good.'

Two G-clauses could be considered as one P-clause in Merged Sentences but, due to the presence of two clause-stresses in all but one sub-type, they have been analyzed as two P-clauses even though there is obligatory absence of pause. (Merged sentences are discussed further in Section 2.1f.)

2. THE PHONOLOGICAL SENTENCE

A P-sentence consists of one or more P-clauses which have a single sentence-stress and characteristic features of pitch at the onset. It is bounded by obligatory pause.

Within each grammatical sentence there is one clause-stress which is higher than the other clause-stresses. This is called sentence-stress. The pitch difference between sentence-stress and clause-stress of the other P-clauses within the sentence may be minimal or considerable.

The onset of a new P-sentence is clearly identified by the high rise of the pitch of clause-stress, and it may also be accompanied by the intonation pattern ...-à?[3] on the first P-clause of the sentence.

2.1 *CONTRASTIVE SENTENCE STRESS AND GRAMMAR*

In Wik-Munkan the placement of sentence-stress (marked by °°) is phonologically unpredictable and thus contrastive. This stress has higher pitch than any other clause-stress in the P-sentence.

(38) / kú? °?ánaŋàn °njí:nìn-#[1] /°°ké? pá̱anj-a[1]
dog those sat:they-int neg *bit:me*-int
'Those dogs sat and they didn't bite me.'

(39) / yúk °°?ánaŋàn pí:kaŋ-#[1] /°t̪é? pí:kaŋ-#[1]
thing those hit:I-int *billy:can hit:I*-int
'I hit those things — I hit those billy cans.'

The placement of sentence-stress, however, is determined by the grammar of the utterance, as shown in the following sub-sections.

(a) In most sentences the sentence-stress is on the first P-clause, on the word and syllable which normally has clause-stress. Such P-sentences consist of a series of P-clauses with /...#[1] intonation

pattern and occasionally / ...-à?[3] pattern. P-sentences of this kind frequently occur in Paraphrase, Temporal, Co-ordinating and Parallel Sentences. A P-sentence may consist of a single P-clause in which case the clause-stress is also the sentence-stress.

Paraphrase Sentence:

(40) *Text:* / nílˡ °°ţáw ţántˢ-#[1] *Paraphrase:* / nílˡ
he *he:said* *to:them(all)*-int *he*

°núŋantàkam wá:?-#[1]
himself *he:told:about*-int
'He said to them — he told about himself.'

Amplification (Paraphrase) Sentence:

(41) *Text:* / ţán yúk °°pí:?anàn ?úmpìn-#[1]
they(all) *tree* *big:*foc *they:cut*-int

Amplification: / ţáyan °pépanàŋ ?úmpìn-#[1]
axe *sharp:with* *they:cut*-int
'They cut down a big tree — they cut it with a sharp axe.'

Sequence (Temporal) Sentence:

(42) *Antecedent Base:* / ŋáy °°?í:yaŋ-à?[3] *Consequent Base*$_1$: / ţá:?
I *I:went*-int *mouth*

°tjáwařàŋ ?úmpaŋàn-#[1] *Consequent Base*$_2$: ↕°?á?-#[3]
big:knife:with *I:cut:it*-int cj-int

/°hookànan wítjaŋàn-#[1]
*hook:*foc *I:pulled:it:out*-int
'I went and cut the mouth (of the fish) with a big knife and pulled the hook out.'

Co-ordinate Sentence:

(43) *Action:* / nílàn kúym °°?álantàn mé:?-wùţan-#[1]
*he:*foc *used:to* *that:one:to* *he:eyes:shut*-int

/ púŋkaŋ njí:n *Co-ord. Action:* ↕ ?á?-#[3] / pám
knee:on *he:sat*-int cj-int *man*

wántj kónjtj ţánaŋ-#[1]
woman *he:cursed* *them(all)*-int
'He used to pray to that one and worship him and curse people.'

Parallel Sentence:

(44) *Text:* / ʇán mán-yàʇam ʔínaŋàn °°kán ké:ʔantàn-#[1]
they(all) alive these punct *they:dance*-int
Parallel: / níl mínjtjalàmàn °kán ké:ʔan-#[1]
*he ghost:*foc punct *he:dances*-int
'Those who are alive dance and he, the ghost, dances.'

Simple Sentence:

(45) / ʔá:k ŋámpařàm °°yímanàŋ wún-#[1]
place/custom ours(all) in:this:manner it:lies-int
'Our custom is like this.'

(46) /°°ŋáʇařàmaŋ-#[1]
*my:*ts-int
'(It was) my (dog which bit).'

(b) In an Inverted Sequence Sentence the sentence-stress may come on the second P-clause which is the *Antecedent Action tagmeme*. (See Section 1.1 (e) for an example.)

(c) When the function morphemes yá? (non-verbal negative/verbal intensifier), ké? (verbal negative) and yá?aŋàm (frustration marker) which take clause-stress occur, they may also take sentence-stress. (See Section 1.1 (f) for examples.)

When a further function morpheme ?ép (factitive marker) occurs in a verbal clause it may take both clause-stress and sentence-stress.

(47) ↕ wíy °°?ép-wèy kú:pamìn-wèy-#[1] ↑°wíyìy-à?[3]
*some fact:*emo *they:happy:*emo-int *some:others*-int
↕ ká:ŋk °ké?-#[3] / pópam °?áŋan njí:n-njì:nìn-#[1]
like neg-int *still there they:sat*-int
'Some were happy (at school) but some didn't like it — they just sat quietly.'

The question tag ?éy, which is always a separate P-clause, never takes sentence-stress but the preceding part of the G-clause does.

(48) ↑ nínt wìk-káʇ °°ké? wá:?ànj-#[2] ≠ /°?éy-#[12<]
you story neg *tell:to:me*-int Q:tag-int
'You wouldn't tell me a story, would you?'

(d) When a P-clause has elevated or expanded intonation, sentence-stress is on that clause within the sentence.

(49) ↑°°?í:yàn-à::[3] /°?á:k ?úwìn-#[1]
they:went-int *place they:found*-int
'They kept on going and then they found the place.'

(50) *Text:Generic:* / ŋáy mín̪ °ŋá? tjíntaŋàn-#[1]
I animal fish I:speared:it-int

Text:Specific: ↕ mín̪ wú:ŋkam °°pí:ʔan tjíntaŋàn-#[1]
animal barramundi big I:speared:it-int
'I speared a fish — I speared a really big barramundi.'

If a sentence has both a P-clause with elevated intonation and a P-clause with expanded intonation, the one with expanded intonation takes the sentence stress.

(51) ↑ ŋáy ká? °ʔí:yiŋànt-à?[3] ↕ púʈ °°yá?-#[1]
I just:as I:should:go:to:him-int *but no*-int
/ níl púʈ °ʔí:kanàk wámpàř-#[1]
he because to:here he:came:to:me-int
'I was about to go to him, but didn't (go) because he came here to me.'

(52) ↑ ŋáy ká? °wántaŋàn-à?[3] ↕ púʈ mín̪ °°pí:ʔan
I about I:leave-int *but fish big*
wítjaŋàn-#[1] / kà?pá:l °ʔáŋam njí:n-njì:naŋ-#[1]
I:caught:it-int *therefore there I:sat*-int
'I was about to go but then I caught a really big fish so I kept sitting there.'

(e) When the pitch of the first P-clause of a sentence is lowered, sentence-stress occurs on the following P-clause which has neutral pitch height.

(53) ↓ níl °ʈáw núŋant-#[1] /°°ké? ʔí:yàn-à?[3] / nínt
he he:said to:him-int neg *you:go:*imp-int *you*
°ínam-à?[3] ↓°ʈáw-#[1]
here:to:stay-int *he:said*-int
'He said to him, "Don't go — you stay here".'

(f) Wik-Munkan has a restricted set of merged grammatical sentence structures where the significant phonological feature is also that of merging. There is obligatory absence of pause (symbolized ≠) between certain tagmemes and the position of sentence-stress in some sub-types is indeterminate.

(i) In the Indirect Quote Sentence there is obligatory absence of pause between the pre-posed *Indirect Quote Formula* and the *Indirect Quote tagmeme*. Sentence-stress occurs on the *Indirect Quote tagmeme*. Following this tagmeme there is pause before the post-posed *Indirect Quote Formula*.

(54) IQF_1: / nǐl pám °ŋáṯaǩàmaŋ wá:? ŋánt-#[1]
he man mine:ts he:told:about to:us-int

≠ *IndQ*: / nǐl ké:nk °°mǐn̰-tùp ʔǐ:y-ʔì:y-à?[3]
he first fish:lucky he:went:and:went-int

IQF_2: ↓ yǐmanàŋ wá:? ŋánt-#[1]
like:manner he:told:about to:us-int

'My husband told us about how he had been a good hunter. He told us what it was like.'

(ii) In the Indirect Quote Content Question Merged Sentence, the Indirect Quote Yes/No Question Sentence, the Indirect Quote Merged Sentence, and the 'Like' Merged Sentence, both clauses take approximately equal stress. These sentences could either be regarded as having no sentence-stress or as having fluctuating sentence-stress. Because of the occurrence of two clause-stresses, these Merged Sentences are considered to consist of two P-clauses. There is, however, obligatory absence of pause between them.

Indirect Quote Content Question Merged Sentence:

(55) MQF: /°éŋkàn ṯánt-#[2] ≠ *MContQ*: /°wántìn wúnpìn-#[2]
you:ask them:to-int-≠ where they:put-int

'Ask them where they put it.'

Indirect Quote Yes/No Question Sentence:

(56) IQuF: /°éŋkàn núŋant-#[2] ≠ *IndQuest*: / nǐl náṯ
ask:you to:him-int-≠ he maybe

°wámpìy-#[2]
he:would:come-int

'Ask him if he would come.'

Indirect Quote Merged Sentence:

(57) MQF: / ŋámp °wá:ʔàmp ṯánt-#[1] ≠
we we:tell:about to:them-int-≠

MIndQ: /°kón-kènjaŋk ʔǐ:yàyn-#[1]
ear:high:up they:to:go-int

'...we will tell them to be alert...'

'Like' Merged Sentence:

(58) *Like Base*: / nǐl °ká:ŋk-#[3] ≠ *Action*: /°wáṯìy
he likes-int-≠ yam:type

múŋkòw-#[1] / púl °mǐnaŋ-#[1]
he:to:eat-int they(two) meat:with-int

'He likes eating yams and meat.'

(59) *Like Base:* / ŋáy °ká:ŋk-#³ ≠ *Action:* / nɪ́pàn
I like-int- ≠ *you(two)*:foc

ŋà:ʔ-ʈòn-ʈón °ʔɪ́:kanàk wámpòw-#¹
every:day to:here you:come(two)-int
'I like you two to come here every day.'

(iii) In the Conditional Answer ('Like' Merged) Sentence the subject pronoun takes sentence-stress. The verb ká:ŋk *'like'* occurs immediately preceding sentence-stress. There is only one clause-stress in this highly elliptical sentence construction.

(60) *Choice Marker:* / ká:ŋk ≠ *Action:* °°nɪ́ntàn náʈ
like *you*:foc *maybe*

ʈé:ʔàř-a²
you:give:to:me-int
(Q: *Would you like tea?*) *'If you would like to give it to me.'* (Implied: *I didn't come asking for tea, but I'd like it if you want to give it to me.*)

(g) In a Cyclic Sentence the clause-stresses on the *Text* and *Text' tagmemes* have approximately the same pitch. This is true irrespective of the pitch on the intervening clause-stress(es). Thus, if there are no features in the sentence (such as elevated or expanded intonation, or certain particles) causing heightening of pitch, the location of sentence-stress is indeterminately or fluctuatingly on the first or last tagmemes. The rise of pitch in the last P-clause up to the clause-stress is not as great as the rise of pitch in the first clause of a new sentence.

(61) / ŋà:ʔʈònʈónàn yìm°°yɪ́manàm-#¹ /°ʔékanàn-#¹ /°máy
*every:day:*foc *this:manner*-int *we:get:up*-int *food*

múŋkanàn-#¹ /°ʔɪ́:yanàn mé:ʔ-ŋàʈanàk-#¹ / nɪ́ɪ °°yɪ́manàm
we:eat-int *we:go* *to:pray* *it* *this:manner*

ʔɪ́:yan ŋà:ʔtòntónànìy-#¹
it:goes *every:day:*foc-int
'Every day it's like this — we get up, we eat and we go to pray. This is the way it is every day.'

(62) / ʔɪ́n °ʔɪ́n-kènj-#¹ /°pɪ́ntalaŋàn ʔúk-#¹
this here:high-int *on:plain:*foc *it:fell*-int

↕ ŋákaŋàn °°ké?am ʔúk-à?³ / ŋáy °ʔɪ́n-kènj
*in:water:*foc *didn't it:fall*-int *I* *here:high*

ʈé:ʔaŋ-#¹ /°pɪ́ntalàŋ-#¹
I:threw-int *on:plain*-int

'It's here above. It fell on the plain – it didn't fall in the water. I threw it above on the plain.'

(h) When a G-sentence expounds a sentence-level tagmeme, the pitch of the sentence-stress of this embedded sentence is approximately the same as the pitch of the clause-stress of a single clause were it to expound this tagmeme. The P-clause divisions, stresses, intonation, speed, and pauses of an embedded G-sentence are the same as those of an unembedded G-sentence.

2.2 *PREDICTABLE PITCH OF A P-SENTENCE*

There are three variants of the overall pitch pattern of the P-sentence. These are in relation to (i) the placement of P-sentence stress and (ii) the pitch height and range of the P-clause which takes sentence-stress.

(a) When sentence-stress occurs in the first P-clause in a sentence of two or more P-clauses, the P-sentence has an overall downdrift of pitch of successive P-clause stresses. When a sentence ends in a series of several P-clauses with -#^{1} or -a^1 as terminal, most of the drop in pitch occurs on the clause which has sentence-stress. In fact, the downdrift of pitch on the series of clauses following sentence-stress is so slight that Wik-Munkan speakers listening to such a sentence often find it impossible to tell where it ends until they hear the pitch step up dramatically for the next P-sentence.

(63) / ŋán °°pék ʔúkan-#^{1} /°kú:y t̪é:ʔan-#^{1} / mɪ́n̪
we down we:went:down-int *line we:threw*-int *animal*

°ŋáʔ wɪ́tjan ŋúl-#^{1} / mɪ́n̪ ŋáʔ °yót ʔánaŋàn-#^{1}
fish we:caught then-int *animal fish lots those*-int
'We went down (to the landing), we threw lines and we then caught lots of fish.'

(b) When sentence-stress occurs on a non-initial P-clause, the clause-stresses of all P-clauses preceding the one with sentence-stress also show an overall downdrift of pitch. Thus, this first part of the G-sentence preceding the P-clause with sentence-stress and the second part which follows it each have the pitch characteristics of a P-sentence with sentence-stress on the first clause. However, even when the sharp rise of pitch characteristic of a new P-sentence occurs on the second part, the two parts are lexically bound in such a way that they could not possibly be two P-sentences.

(64) / nɪ́l mɪ́n̰ °páŋk púŋ-#[1] / mɪ́n̰ páŋk
he animal wallaby he:shot-int *animal wallaby*
°°pɪ́:ʔan-#[1]
big-int
'He shot a wallaby. It was a big one.'

(65) .../ wɪ́y ká:ŋk °ké? ʔɪ́ŋan nyɪ́:nyàn-#[1] ↕ ɟán
some like neg *stay:here to:sit*-int *they(all)*
ká:ŋk °°yó:n péntàyn-#[1] / ké:ʔanàk-#[1]
like outside to:go-int *to:play*-int
'Some don't like sitting in here. They really like to go outside to play.'

(c) The pitch on the syllable with sentence-stress is higher than usual if the sentence-stress is on a P-clause with elevated or expanded intonation. The height of P-clause stress in a P-clause with expanded pitch range may override the height of P-clause stress in a P-clause which contains a word such as the negative ké? which frequently attracts sentence stress. (See example (65).)

(66) ↑ ŋán °°kánàn kɪ́:ŋkanàn-à?[3] /°múŋkan ŋúl-#[1]
we punct:foc *we:cooked:it*-int *we:ate then*-int
/ mɪ́n̰ °ŋá? ʔánaŋàn-#[1]
animal fish those-int
'When we had cooked them we ate those fish.'

2.3 *PREDICTABLE SPEED IN A P-SENTENCE*

Apart from the variations of speed already described for individual clauses (see Section 1.4) the timing of a series of P-clauses within a P-sentence is relatively even, with two exceptions, viz.,

(a) In six sub-types of Juxtaposed Sentences (Paraphrase, Amplification, Negated Antonym, Generic-Specific, Reduction, and Reduction Amplification) all P-clauses following the first G-clause tend to be faster.

(b) In the Completive Action Sequence Sentence the last P-clause is faster than the others.

2.4 *SENTENCE AND PARAGRAPH*

If one considers only the size and complexity of themes, one would expect to find a distinction between sentences and paragraphs in Wik-Munkan. During the analysis of the grammar, however, it proved

impossible to find any structural evidence of such a distinction. All the grammatical units of these kinds, both large and small, complex and simple, were analyzed as G-sentences (Sayers 1976). When we examine Wik-Munkan phonology we find again that there is no difference between what we might at first think to be sentences and paragraphs. Both kinds or sizes of utterances have the phonological features of a P-sentence, that is, one P-sentence is always one G-sentence and vice versa. A single P-sentence in Wik-Munkan may encompass as many as fourteen or more G-clauses which would be translated into English as a paragraph of several sentences. The only grammatical difference between this and a short sentence is the extensive embedding of sentences within sentences, that is, it is a structure of embedding rather than a linear string of clauses.

It is possible to paraphrase such a long P-sentence as several shorter P-sentences, but only by changing the grammatical structure so that each is a typical G-sentence, and by inserting adequate lexical repetition to give identification of the participants, time and location, and by making the logical relationships quite explicit.

The analysis of the complex Wik-Munkan structure as being only divisible by paraphrasing is validated by the reaction of literate Wik-Munkans. If full stops are inserted within a P-sentence following what appears to be complete G-sentences, the Wik-Munkan reader is confused unless the paraphrasing adjustments are made as described above. If paraphrasing adjustments are not made and full stops are inserted, he may confuse the participants, lose track of the time or location, or fail to make the logical connection. However, when a long P-sentence which is so typical of oral Wik-Munkan, is paraphrased into several shorter G-sentences, the Wik-Munkan reader can read these shorter G-sentences (which are also complete P-sentences) accurately, fluently and with comprehension.

(67) ↑ ʈán ʔínan °work ʔí:yantàn-#¹ /°yúk ʔúmpantàn-#¹
they this work they:go-int *tree they:chop*-int

/ ʈà:ʔ-°ʈá:ʔ-#¹ / ɲà:ʔʈòn°ʈón-à³ / yúk °mango
all:the:time-int *every:day*-int *tree mango*

ʔínaŋàn ʔúmpantàn ʈánaŋ-#¹ /°ké:katantàn ʈánaŋ-à³ʔ
these they:chop them-int *they:fell them*-int

/°°ŋé:nam-a² / ʔánan púʈ yìm-°yímanàm-#¹
what:from-int *that because in:this:manner*-int

/ wánjtj ʔálpan ʈónam °wárʔam má:kan-#¹
woman sick one almost it:crushed:her-int

/°púŋţanàn píp-#[1] / yúkàn ʔáŋaŋ-#[1]
*branch:that:*foc *it:broke-*int *tree-*foc *heavy-*int

/°máyaŋàm ŋáţ púţ-a[3] / nán-pàl yá:ʔ-kàʔ
*full:with:fruit is:shut so:*int *from:that maybe*

°ŋé:n-#[2] /°yúkànìy ţúţ-#[1] / ţán púţ
*what-*int *tree:*foc:sp *it:broke-*int *they but*

nán-pàlan yúk °ʔínaŋàn púpantàn ţánaŋ-#[1]
*from:that(reason) tree these they:cut:down them-*int

/ ŋà:ʔtòn-°tónaŋànìy-#[1] ↕ ʔán pút ʔá:k °wáy ŋúl
*every:day-*int *that because place bad later*

ŋé:n-#[2] /°ʔálpan ţák má:k-#[1] /°wúnanàngànìy-#[1]
*what-*int *sick:people etc. it:crush-*int *lying:there:*

/°nán-pàlan ʔúmpantàn-#[1]
foc:sp-int *from:that:reason they:chop-*int

'Why are the men here working every day — chopping down and felling these mango trees? It's like this. A sick woman was almost crushed when a branch broke. The branch broke because it was heavy with fruit — maybe that's the reason the tree broke. Therefore the men are chopping down these trees each day — otherwise the place would become dangerous. Why would it become dangerous? Well...the sick people lying there would get crushed. That's why they are chopping these trees down.'

3. INTONATION

3.1 *CONTRASTIVE COMPONENTS OF INTONATION PATTERNS*

Segmentally, a phonological clause consists of one or more words bounded by pause or potential pause, and in merged sentences by lack of pause. In many instances a characteristic monosyllabic clitic or 'intonation carrier' is attached to the last word. In this way meaning contrasts are shown by: -a, -àʔ, -à:/-è:, -à::, -àw, and absence of a clitic.

Suprasegmentally, each phonological clause has one clause-stress (except in a Conditional Answer Merged Sentence) and contrastive patterns of pitch and loudness. These both mark the P-clause off as a phonological unit and indicate its syntactic status within the larger utterance. It is convenient to describe some of these features in relation to the two sections of the Phonological clause, viz., terminal and body.

If the last syllable of the P-clause has clause-stress (in which case it is not an intonation carrier clitic), then the last half of this last syllable is the terminal and all but this last half syllable is the body. If the last syllable does not have clause-stress, then that last syllable is the terminal and all that precedes it is the body.

In the body of the P-clause the placement of clause-stress is phonologically contrastive but grammatically determined. On the other hand, the relative pitch of each syllable in the body is phonologically determined and thus non-contrastive.

There are two intonational features of the whole P-clause which are phonologically contrastive:

(a) the general pitch level which may be neutral, elevated, or lowered, and

(b) the pitch range which may be neutral, expanded, or compressed.

The terminal of the intonation pattern has two features which are phonologically contrastive:

(a) the pitch level or glide of the terminal which may be low, mid, high, low-mid rise, or high-low fall; and

(b) the loudness shape (envelope) of the terminal which may be steady, crescendo, or crescendo-decrescendo.

The twenty-six contrastive intonation patterns of Wik-Munkan are listed in Table 1, showing their contrastive features in the Body, Carrier and Terminal.

The General pitch level and pitch range of the P-clause are shown preceding the clause by one symbol for each combination. They are:

/ neutral and neutral

↑ elevated and compressed

↕ neutral and expanded

↓ lowered and neutral

The carrier clitic is shown immediately following the clause. When no clitic occurs -# marks its absence.

The contrastive levels and glides of relative pitch on the terminal are shown by superscript numbers following the carrier clitic: ^{1} for low, ^{2} for mid, and ^{3} for high pitch.

The contrastive loudness shapes are marked as superscripts following the pitch numeral: no marking for steady, $^{<}$ for crescendo, and $^{<>}$ for crescendo-decrescendo.

TABLE 1: AN INVENTORY OF THE INTONATION PATTERNS SHOWING THEIR CONTRASTIVE COMPONENTS

Pattern			Body		Carrier	Terminal	
Section		*Page*	General pitch level	Pitch range		Pitch: level or glide	Loudness shape
3.2.1	/...-#^{1}	54	neutral	neutral	#	low	steady
3.2.2	/...-a^{1}	56	neutral	neutral	-a	low	steady
3.2.3	/...-à?$^{3<>}$	58	neutral	neutral	-à?	high	steady
3.2.4	/...-à$^{31<>}$	59	neutral	neutral	-à	high-low	crescendo-decrescendo
	/...-èy$^{31<>}$	59	neutral	neutral	-èy	high-low	crescendo-decrescendo
3.2.5	/...-#^{2}	59	neutral	neutral	#	mid	steady
3.2.6	/...-a^{2}	60	neutral	neutral	-a	mid	steady
3.2.7	/...-#$^{12<}$	61	neutral	neutral	#	low-mid	crescendo
3.2.8	↑...-#^{1}	62	elevated	compressed	#	low	steady
3.2.9	↑...-a^{1}	63	elevated	compressed	-a	low	steady
3.2.10	↑...-à?^{3}	63	elevated	compressed	-à?	high	steady
3.2.11	↑...-è:$^{31<>}$	65	elevated	compressed	-è:	high-low	crescendo-decrescendo
	↑...-à:$^{31<>}$	65	elevated	compressed	-à:	high-low	crescendo-decrescendo
3.2.12	↑...-#^{2}	65	elevated	compressed	#	mid	steady
3.2.13	↑...-à::^{3}	65	elevated	compressed	-à::	high	steady
3.2.14	↓...-#^{1}	66	lowered	neutral	#	low	steady
3.2.15	↓...-a^{1}	67	lowered	neutral	-a	low	steady
3.2.16	↓...-à?^{3}	67	lowered	neutral	-à?	high	steady
3.2.17	↓...-#^{2}	68	lowered	neutral	#	mid	steady
3.2.18	↓...-#$^{12<}$	68	lowered	neutral	#	low-mid	crescendo
3.2.19	↕...-#^{1}	68	neutral	expanded	#	low	steady
3.2.20	↕...-a^{1}	69	neutral	expanded	-a	low	steady
3.2.21	↕...-à?^{3}	69	neutral	expanded	-à?	high	steady
3.2.22	↕...-à$^{31<>}$	69	neutral	expanded	-à	high-low	crescendo-decrescendo
	↕...-èy$^{31<>}$	69	neutral	expanded	-èy	high-low	crescendo-decrescendo
3.2.23	↕...-àw$^{31<}$	70	neutral	expanded	-àw	high-low	crescendo
3.2.24	↕...-#^{2}	70	neutral	expanded	#	mid	steady
3.2.25	↕...-a^{2}	70	neutral	expanded	-a	mid	steady
3.2.26	↕...-#^{3}	71	neutral	expanded	#	high	steady

3.2 *GRAMMATICAL USAGE OF EACH PATTERN*

3.2.1 The /...-#[1] pattern is used in several ways.

(a) It may occur on the last P-clause of a sentence, especially when the last syllable of the body of the P-clause is stressed. Many kinds of sentences may end with this intonation, and it conveys an indicative meaning. The last syllable of the clause is low pitch, or falls from the high of the clause-stress to low pitch if clause-stress occurs on the final syllable.

(68) / púk °°ʔánaŋàn wámpìn-#[1]
child those they:came-int
'Those children came.'

(69) / ŋán °°ʔá:kanàk ʔí:yan-#[1] /°máy múŋkanàk-#[1]
we(all) to:there we:went-int *food to:eat*-int
'We went there to eat.'

(b) It may also occur on a non-final P-clause in a Paraphrase Sentence to show the appositional relationship between the clauses.

(70) / púl °°ʔúm móʔpùl-#[1] / ŋán
they(two) straight:towards they(two)ran-int *we(all)*
ʇáʇanàn púl °ʔúmàn móʔpùl-#[1]
*we(all)saw they(two) straight:towards:*foc *they(two)ran*-int
'They ran towards each other. We saw them run towards each other.'

(71) /°°ʔú:kanàn-#[1] /°ʔótjaŋànaŋ ʔú:kanàn-#[1]
we:scraped-int *mud:shell:with we:scraped*-int
'We scraped it – we scraped it with a mudshell.'

(72) /°°ŋá:ʔʇàm-#[1] ↓ pám pí:ʔan °kánàn ʇáʇàŋàn-#[1]
tomorrow-int *man big* punct:foc *I:will:see:him*-int
/ ŋáy °kán-ŋùl ʔí:yàŋ-#[1]
I punct:*then I:will:go*-int
'Tomorrow, after I've seen the important man, I'll go.'

(73) / ʇán ŋúl wìk-°°káʇ wá:ʔàyn-#[1]
they(all) later word-old(story) they(all)will:tell:about-int
↓ ʇán °pé:tanànàn wámpìn-#[1] / wìk-
*they(all) yesterday:*foc *they(all)came*-int *word-*
‹áʇ °mín wá:ʔàyn-#[1]
old(story) good they(all)will:tell-int
'Those who came yesterday will tell a story later. They will tell a good story.'

(c) This pattern always occurs on the G-clause preceding a clause with a deleted predicate to show the appositional relationship.

(74) / ŋáy-°nùŋantìy-à?³ /°°kénjaŋk wúnaŋ-#¹ / nílàř
I:hers-int *high:on* *I:lay*-int *she:mine*
°pékaŋk-#¹
below:on-int
'I slept on the top (bunk) and she (slept) below.'

(75) .../ mák °°pát̪àyn mé?aŋ-#¹
nevertheless *they:bite*-int *mosquitos:*ts-int
'...nevertheless, the mosquitos bit us.'

(d) It also occurs on the P-clause preceding an aside or a relative clause and indicates their appositional relationship to each other.

(76) / t̪án wìk-kát̪ °°mín wá:?ìn-#¹
they *word-old(story)* *good* *they:told*-int
/ wìk-kát̪ °ké:nkanàmàn-#¹
word-old(story) *from:a:long:time:ago:*foc-int
'They told us a good story from a long time ago.'

(e) It always occurs on repeated verbs to indicate continuation of action or motion.

(77) /°°ú:kanàn-#¹ /°?ú:kanàn-#¹ /°?ú:kanàn-à?³
we:scraped:it-int *we:scraped:it*-int *we:scraped:it*-int
'We scraped and we scraped and we scraped and then...'

(78) /°°?í:yanàn-#¹ /°?í:yanàn-#¹ /°?í:yanàn-à?³ ↕°?á?-#³
we:went-int *we:went*-int *we:went*-int *and:then*-int
'We went on and on and on and then...'

(f) It may occur where the object, indirect object or benefactive contains a serial list and follows the verb.

(79) / t̪án °°káyàlpan mámwùntàn-#¹ /°kámpan-kùnjtj
they *charcoal* *they:rub:each:other*-int *relatives:true*
?ánaŋàn-#¹ /°ká:t̪-kùnjtj-#¹ /°múk-kùnjtj-#¹
those-int *mothers:true*-int *m.o.b:true*-int
/°kú:njtj-kùnjtj ?ánaŋàn-#¹
siblings:true *those*-int
'They — those relatives, the mothers, the mother's older brothers and the brothers and sisters — rub each other with charcoal. That's how they rub themselves.'

(80) / ṯán wày-mín °°ṯánt ṯé:ʔìn-#¹ /°ká:ṯ-kùnjtjant-#¹
they things to:them they:gave-int *mother:true:to*-int
/°pí:p-kùnjtjant-#¹ /°púk-kùnjtjant-#¹
father:true:to-int *child:true:to*-int
'They gave things to them — to the mother, the father and the children.'

(g) It may also occur on the first (*Consequent Action*) *tagmeme* of an Inverted Sequence Sentence.

(81) / ŋán °ʔí:yan ŋúl-# /°°kánamàn ŋán kúlìtj
we(all) we:went then-int punct:foc *we(all) clothes*
púŋan-#¹
we:washed-int
'We went after we had washed the clothes.'

(h) It may alos occur on the second (*Indirect Quote*) *tagmeme* of the Indirect Quote Sentence.

(82) / níl °wú:tàn wá:ʔ ṯánt-# / níl
*he old:man:*foc *he:told:about to:them*-int *he*
ké:nkam pàm-wántj °°yót tjínt-tjìnt-#¹
long:time:ago people lots he:speared-int
/°kékaŋ-#¹ / níl °yímanàŋ wá:ʔ
spear:with-int *he like:this he:told:about*
núŋantàkam-#¹
himself-int
'The old man told them that long ago he speared lots of people. He told them all about himself.'

3.2.2 The /...-a¹ pattern with a lenis a and low pitch, is used in the same ways that pattern /...-#¹ is used and with the same meanings. From a phonological point of view, however, these two patterns are not merely free variants of a single emic pattern since their occurrence is considerably determined by the grammatical status of the last word of the P-clause.

(a) Only the /...-#¹ pattern occurs if the P-clause ends in an object pronoun or in the words ŋul, kan, or yáʔaŋàm, or if the P-clause ends in a customary aspect verb (which has secondary stress on its final syllable) in a series of repeated verbs (see Section 3.1.2 (d)).

(83) / ṯán °°kán ʔí:yìn ŋúl-#¹
they(all) punct *they(all)gone now*-int
'They have gone already.'

(84) / nɨ́l ʔàtaᵒᵒmáyan pɨ́:k ʈánaŋ-#¹
he hard he:hit them(all)-int
'He hit them hard.'

(85) /ᵒwénkantàn-#¹ /ᵒwénkantàn-#¹
they(all)looked-int *they(all)looked*-int
/ᵒwénkantàn-#¹ ↕ púʈ ᵒᵒyáʔaŋàm-#¹
they(all)looked-int *but to:no:avail*-int
'They looked and looked and looked but to no avail.'

(b) Both /...-#¹ and /...-a¹ occur but the former predominates if the P-clause ends in a verb whose last syllable has secondary stress or if the P-clause is a non-verbal clause with a non-final interrogative pronoun.

(86) / ʈán ᵒᵒkétj ʔɨ́:yìn-#¹
they(all) long:way they:went-int
'They went a long way!'

(87) / nɨ́l wé:ʔàn ᵒᵒmɨ́n-#¹
*he who:*foc *good*-int
'Who is good?'

(c) Both patterns occur in free variation if the P-clause ends in an indirect object pronoun, or in the negative words ké? or yá?, or if the P-clause is an indicative non-verbal clause.

(88) /ᵒᵒʔánan wá:? púlant-#¹
/ᵒᵒʔánan wá:? púlant-a¹
that he:told:about to:those:two-int
'He told those two about that.'

(89) / ʔán ᵒmɨ́n núŋant-#¹ ↕ᵒᵒyáʔ-#¹
/ ʔán ᵒmɨ́n núŋant-#¹ ↕ᵒᵒyáʔ-a¹
that good for:him-int *not*-int
'That's not good for him!'

(90) / yúk yóŋkàn ᵒᵒʈáyan-#¹
/ yúk yóŋkàn ᵒᵒʈáyan-a¹
*tree ironwood:*foc *hard*-int
'The ironwood tree is hard (wood).'

(d) Both patterns occur but /...-a¹ predominates if the P-clause ends in a verb whose final syllable is unstressed.

(91) / ŋáy ᵒᵒkán ʈáʈaŋ-a¹
I punct *I:saw*-int
'I saw it.'

3.2.3 The pattern /...-à?^{3} is used in several ways and the meaning carried by it is sequential. The 'intonation carrying' clitic has high pitch and is frequently as loud as the syllable with clause-stress. If the preceding syllable is low pitch because it does not have clause-stress, the final syllable has a low-high pitch glide.

(a) It is usually used in all but the final clause of a Sequence Sentence. The final clause has a marked drop of pitch and intonation pattern ↓...-#^{1}.

(92) /°°wúnan-à?^{3} ↓°tjúkùn ʈáʈan-#^{1}
we:stayed-int *boat* *we:saw*-int
'We stayed and then we saw the boat.'

(93) / mín °°páŋkàn tjíntan-à?^{3} /°má:yan-à?^{3}
animal *wallaby*:foc *we:speared*-int *we:picked:up*-int
↓°kí:ŋkan núnaŋ ŋúl-#^{1}
we:cooked *it* *then*-int
'We speared a wallaby, picked it up and then we cooked it.'

(b) It may occur on the first (Consequent Action) tagmeme of an Inverted Sequence Sentence.

(94) / níp °?í:yùw-à?^{3} / yúk ?ánaŋàn kà:?áʈam
you(two) *you(two)went*-int *things* *those* *first*
°°kánàn púŋùw-#^{1}
punct:foc *you(two)had:washed*-int
'You two went after you had washed those things.'

(c) It may be used within the grammatical clause for serial (co-ordinate) listing of persons or things (other than the final P-clause of a list).

(95) /°°ŋáy-à?^{3} /°nínt-à?^{3} ↓°ŋál ?í:yal-#^{1}
I-int *you*-int *we(two)* *we(two)went*-int
'You and I went.'

(96) / níl °°pál kál ʈánaŋ-#^{1} /°kék-à?^{3}
he *to:here* *he:carried* *them*-int *spear*-int
/°ʈúl-à?^{3} ↓ mín °ŋá? ?ánaŋàn-#^{1}
woomera-int *animal* *fish* *those*-int
'He carried his spear, woomera and those fish back here.'

(d) It may be used with the Content-interrogative clause.

(97) /°°wántìnàk ní:y ?í:yan-à?^{3}
where:to *you(all)* *you(all)went*-int
'Where did you go?'

(e) *The Indirect Quote tagmeme* of the Indirect Quotation Sentence may have this pattern.

(98) IQF_1: / nílˡ pám °ŋáṯařàmaŋ wá:? ŋánt-#[1] ≠
he man mine-ts *he:told:about to:us*-int

IndQ: / nílˡ ké:nk °°míṉ-ṯùp ?í:y-?ì:y-à?[3]
he first animal:clever he:went-int

IQF_2: ↓°yímanàŋ wá:? ŋánt-#[1]
like:this he:told:about to:us-int

'My husband told us about how he had been a clever hunter; he told us how it had been.'

3.2.4 The pattern /...-à$^{31<>}$ is used only in Tag Questions. The clitic -à occurs with a glide from high to low pitch with quick crescendo followed by decrescendo. On non-verbal Tag Questions, teenagers use /...-èy$^{31<>}$ as a free variant of this pattern or even as a substitute for it.

(99) /°°nílˡ wámp-à$^{31<>}$
he he:came-int*(didn't he)*
'He came, didn't he?'

(100) /°°púṯant-à$^{31<>}$
that:it-int*(isn't it)*
'That's the one, isn't it?' or *'That's true, isn't it?'*

(101) / námp núŋant Miss °°Sayers-à$^{31<>}$
name hers Miss Sayers-int*(wasn't it)*
'Her name was Miss Sayers (wasn't it)?'

(102) / ?án °°yót-èy$^{31<>}$
that lots-int*(aren't they)*
'There are lots, aren't there?'

3.2.5 The /...-#^{2} pattern is used P-sentence-final in two ways. The meaning conveyed by this pattern is interrogative. The body of the P-clause has neutral pitch level and pitch range. The terminal has mid pitch which is slightly lower than mid if the final syllable is unstressed. If the final syllable has clause-stress, it consequently has a high-mid pitch glide. If the clause-stress is on the antepenultimate syllable or earlier, the downdrift of pitch following the clause-stress is more gradual than in most intonation patterns. In fact, it only reaches a pitch slightly higher than mid on the penultimate syllable if it is stressed, or slightly lower than mid if it is unstressed.

(a) This pattern may be used for Yes/No Questions where intonation is the only feature signalling that the utterance is a question rather than a statement. When the younger generation use this pattern with Yes/No Questions, they always add the post-posed particle ʔéy as an extra P-clause, as described in Section 3.2.7. (Note that in Yes/No Questions ending with past tense verbs that this final syllable receives secondary stress over-riding the intrinsic lack of stress of the past tense suffix.)

(103) / tjúkùn ʈ́ónàn °°ké? ʈ́áʈàn-#²
boat another:foc neg *you:see*-int
'You didn't see another boat, did you?'

(104) /°°ʔínan-#² /°ʔínan wúnpàn-#²
here-int *here you:put*-int
'(Is it) here? Did you put it here?'

(b) The same pattern may also be used with Content-Interrogative Sentences (but without any over-riding secondary stress).

(105) /°°wántàk wítjan núnaŋ-#²
what:for you:pulled her-int
'Why did you pull her?'

(106) / níl °°wántìnàk ʔí:yòw-#²
he where:to will:go-int
'Where is he going?'

3.2.6 The pattern /...-a², with lenis -a and mid pitch, is used in the same ways as pattern /...-#², and conveys the same interrogative meaning. These two patterns are not merely phonologically free variants since their occurrence is determined partly by the grammatical status of the last word of the P-clause.

(a) Only the /...-#² pattern occurs if the clause is a Yes/No Question with its final secondary stress, or if the clause is a content interrogative sentence whose last word is an object pronoun.

(107) / nínt °°ŋúl ŋí:yàn-#²
you later you:will:go-int
'Will you go later?'

(108) / nínt °°kán ʈ́áʈan núnaŋ-#²
you punct *you:saw her*-int
'Did you see her?'

(b) Both /...-#² and /...-a² occur but the former predominates if the clause is a content question whose last syllable is stressed.

(109) / púkaŋ °°ŋé:naŋ wúnp-#²

/ púkaŋ °°ŋé:naŋ wúnp-a²

*child:*ts *what:in he:put*-int

'What did the child put it in?'

(c) Both patterns occur in free variation if the clause is a content question ending in an indirect object pronoun or is a non-verbal content question with a non-final interrogative pronoun.

(110) / nílˌ °°ŋé:nàk ṯé:? núŋant-#²

/ nílˌ °°ŋé:nàk ṯé:? núŋant-a²

he what:for he:gave to:him-int

'Why did he give it to him?'

(111) / kú? wé:?antàm °°kúlˌìy-#²

/ kú? wé:?antàm °°kúlˌìy-a²

dog whose savage-int

'Whose dog is savage?'

(d) Both patterns occur but /...-a² predominates if the clause is a content question whose last syllable is unstressed.

(112) / nílˌ wé:?àn °°?átj?ùmp?ùmpan-a²

*she who:*foc *looks:nice*-int

'Who looks nice?'

3.2.7 The pattern /...-#¹²< is used only on the question particle ?éy. In the usage of the younger generation, a Yes/No Question with /...-#² (Section 3.2.5) and Polite Question with ↑...-#² (Section 3.2.12) are both obligatorily followed, without pause, by ?éy. This question particle is part of the G-clause, but it constitutes an extra P-clause and has intonation pattern /...-#¹²< on it. The glottal of ?éy is lost due to the lack of pause. However, when ?éy is repeated, as it sometimes is, the second ?éy retains the glottal and is preceded by an optional pause. The -èy carrier clitic of the intonation patterns /...-èy³¹<> and ↕...-èy³¹<> is probably related to this particle ?éy, but it does not seem to have the pitch features of a separate P-clause nor may it be repeated. It is very likely that ?éy and -èy are borrowed forms of the English confirmation request particle eh that is so frequent in the speech of Northern Queensland.

(113) / nílˌ pám °°mín-#² ≠ /°?éy-#¹²<

he man good-int Q-int

'Is he a good man?'

(114) ↑ nɨ́p tjám °°ké? ʈ́áʈ̀w-#² ≠ /°?éy-#¹²<
you(two) Sam neg *you(two)see*-int Q-int
'You wouldn't have seen Sam, would you?'

(115) ↑ tjúkùn ʈ́ónàn °°ké? ʈ́áʈ̀àn-#² ≠ /°?éy-#¹²<
*boat another:*foc neg *you:see*-int Q-int
'You didn't see another boat, did you?'

(116) /°°?ɨ́n-#² ≠ /°?éy-#¹²< /°?éy-#¹²<
here-int Q-int Q-int
'(Is it) here? Answer me!'

3.2.8 The pattern ↑...-#¹ may be used in two ways. The P-clause has elevated pitch level and compressed pitch range, the terminal has low pitch, and there is no 'intonation-carrying' clitic.

(a) As the first P-clause in a sentence, it may occur in Simultaneous, Conditional and Concession Sentences.

Simultaneous Sentence:
(117) ↑ púk °°mánjamàn mé:?-pèntjantàn-#¹ /°kú:tan
*child small:*foc *they:are:born*-int *umbilical:cord*
wá:?antàn-#¹ /°pám ?álantàn-#¹
they:call man that:to-int
'When children are born they perform the umbilical cord ceremony to identify that (kuutan) *man.'*

Conditional Sentence:
(118) ↑ nɨ́l wé:?aŋ °°ké? wɨ́k ŋé:yòwànj-#¹ / ŋáy °?ép
*he who:*ts neg *word he:hear:me*-int *I* factitive
mú́làʈ̀àŋàn-#¹
I:will:kill:him-int
'If anyone doesn't listen to me, I will kill him!'

Concession Sentence:
(119) ↑ núŋkwòy ʈ́ók °°pɨ́:?an kɨ́:ŋk-kɨ̀:ŋkanàmp-#¹
even:though smoke big we:cook-int
/ mák °páʈ̀àyn-#¹ /°mé?aŋ-#¹
*nevertheless they:bite mosquitos:*ts-int
'Even though we made a lot of smoke, the mosquitos bit (us).'

(b) As other than the first P-clause in a sentence, it may occur in a Simile Sentence.

Simile Sentence:

(120) *Prop:* ↑°ké? pí:kanàmànìy-à?[3] / ṯà:?té:kàn
neg *hit:perfect:*sp-int *mouth:saliva:*foc
°ṯá:?amàn wúnpìyìn-#[1] /°má?aŋ-#[1] /°mé:?
*mouth:from:*foc *they:put-*int *hand:with-*int *eyes*
námp-nàmpùwìn-#[1]
*they:rubbed:themselves-*int
Simile Base: ↑ ká? mè:?-°°kám yímanàm-#[1]
like *eye:juice* *like:manner-*int
'(The children who) had not been hit put saliva from their mouth on their fingers and rubbed their eyes with their hands. It was like tears...'

3.2.9 The pattern ↑...-a[1] may also be used in the same ways as ↑...-#[1] (Section 3.2.8). Grammatical and rhythmic factors similar to those listed in Sections 3.2.2 and 3.2.6 determine which of these two patterns is used in any particular utterance.

(121) ↑ níl ŋáyaŋ °°ké? ṯáṯòwànj-a[1] / ŋáy kù?wá:k
she me neg *she:will:see:me-*int *I* *cat*
°núŋantàm múlàṯàŋàn-#[1]
hers *I:will:kill:it-*int
'When she is not looking at me I'll kill her cat.'

3.2.10 The pattern ↑...-à?[3] occurs in free variation with the pattern ...-#[1] in Simultaneous, Conditional, Concession and Simile Sentences (Section 3.2.8).

(122) ↑ núŋkwòy ŋán má? °wéntj ?úwanàn-à?[3]
regardless:of:the:fact *we(all)* *hands* *sore* *we:find-*int
/ wáyk wé?anàmàn-#[1] ↕ púṯ ?án °°mákant-#[1]
dye *from:digging:*foc-int *but* *that* *must-*int
'Regardless of the fact that we get sore hands from digging dye, nevertheless we must continue...'

It also occurs, however, in contexts where the pattern ↑...-#[1] does not occur, i.e. as 'Sentence Topic',[3] and in imperative sentences and introductory time clauses. The P-clause has elevated pitch level and compressed pitch range. The clitic -à? in the terminal of the P-clause has high pitch.

(a) Sentence initially this pattern carries the meaning of sentence topic. The clitic -à? is usually as loud or louder than the syllable

with clause-stress. Two or three of these P-clauses may occur in sequence within one grammatical clause. (See also Section 1.4 (ii).)

(123) ↑°°ké? pí:kamànànìy-à?³ / ʈà:?ʈé:kàn °ʈá:?amàn
neg *hit:perfect:*foc:sp-int *saliva:*foc *from:mouth:*foc
wúnpìyìn-#¹
*they:put:it-*int
'(The children who) hadn't been hit put saliva from their mouths...'

(124) ↑°°níìànìy-à?³ ↑°Tariìànìy-à?³ ↑ pám °pí:anànìy-à?³
*he:*foc:sp-int *Tariri:*foc:sp-int *man* *big:*foc:sp-int
/ níì °kóy-kòyuw ʈú:tj-#¹ /°núŋantàŋ-#¹ / pám
he *behind* *he:crept-*int *behind:him-*int *man*
°ʈón ?áìantàŋ-#¹
other *behind:that:one-*int
'He, Tariri, that big man, crept behind him, that other man,...'

(125) ↑°nánpàìànìy-à?³ ↑°Tariri?ànanìy-à?³ ↕ níì ŋáŋk mín
*after:that:*sp-int *Tariri:*foc:sp-int *he* *heart* *good*
°°yá?-#³¹<>
*not-*int
'After that Tariri, he was not happy,...'

(b) The Imperative Sentence always has this pattern. The intonation is the only feature which shows that the sentence is imperative rather than a future statement.

(126) ↑ ní:y má?-yù:p °°ké?aŋàŋ njí:nàn-à?³
you:all *hands:restless* *without* *you:sit-*int
'Sit still!'

(127) ↑°°páì káìàř-à?³
to:here *you:carry:to:me-*int
'Bring it here to me!'

(c) An introductory time clause always has this intonation pattern.

(128) ↑ ŋán máy °°kánàn múŋkanàn-à?³ / ŋán
we:all *food* punct:foc *we:had:eaten:it-*int *we:all*
°?á:kanàk ?í:yan ŋúì-#¹ /°máìp ké:?anàk
to:that:place *we:went* *then-*int *corroboree* *to:dance*
ŋúì-#¹
*then-*int

'When we had eaten our food, we went to that place to dance a corroboree.'

3.2.11 The pattern ↑...-è:$^{31<>}$ occurs P-sentence-final in a one P-clause sentence. The clitic -è: or -à: has a down glide from high or extremely high pitch to low during which there is crescendo followed by decrescendo. The general pitch of the whole P-clause is elevated and compressed to a narrow range, which may be almost a monotone. The meaning conveyed by this pattern is pleading or desiderative.

(129) ↑ kán °°ṯáṯàŋ-à:$^{31<>}$
punct *I:will:see*-int
'I want to see it!'

(130) ↑ kán °°wámpàw-è:$^{31<>}$
punct *he:will:come*-int
'I wish he would come.'

3.2.12 The pattern ↑...-#^{2} is always used on polite questions. Such questions are negative in form and the verb is usually subjunctive. The body of the P-clause has an elevated level of general pitch and a compressed range of pitch, the terminal is mid pitch, and there is no intonation carrier clitic. When the younger generation use this pattern with polite questions they always add the post-posed particle ?éy as an extra P-clause, as described in Section 3.2.7.

(131) ↑ nǐp tjám °°ké? ṯáṯìw-#^{2}
you(two) *Sam* neg *you(two)see*-int
'You wouldn't have seen Sam, would you?'

3.2.13 The pattern ↑...-à::^{3} occurs P-sentence-medial and indicates that the action described took considerable time. The clitic -à:: is long and loud and has high pitch. It lacks descrescendo and may be laryngealized. The relative length of the action is shown by the relative length of the 'intonation-carrying' clitic. (Reduplication of the verb stem usually co-occurs indicating continuous action.) The general pitch level of the P-clause is elevated and the pitch range is compressed.

This pattern occurs sentence-medial and the final P-clause, which indicates the final action, has a drop of pitch to the intonation pattern ↓...-#^{1} as described in Section 3.2.14.

(132) ↑°°kál-kàlìn-à::^{3} ↓°á:k ?úwìn-#^{1}
they:rowed:and:rowed-int *place* *they:found*-int
'They rowed and rowed and then they found the place.'

(133) ↑°°ʔíːy-ʔìːyaŋ-àːː[3] ↓°ʔíŋ wámpaŋ-#[1]
I:went:and:went-int *here:to:stay* *I:came*-int
'I went on and on, and then I came to stay here.'

3.2.14 In the pattern ↓...-#[1] the general pitch of the whole P-clause is lowered. This pattern has a free etic variant: there is optionally a slight narrowing of the pitch range. This pattern is used in several ways.

(a) This intonation signals a relative clause or an aside which is within or which follows another clause. Frequently this relative clause or aside is bounded by potential pause rather than distinct pause. Following this relative clause or aside, the return of the general pitch level back up to neutral may involve either a slight or considerable step up.

(134) / ʇán ŋúl wìk-°°kát wáːʔàyn-#[1] ↓ ʇán
they *later* *word-old(story)* *they:will:tell*-int *they*
péːtanàmàn wámpìn-#[1] / wìk-kát °mín
yesterday:foc *they:came*-int *word-old(story)* *good*
wáːʔàyn-#[1]
they:will:tell-int
'Those who came yesterday will tell a story later. They will tell a good story.'

(135) / níl °kétj ʔíːyàw-#[1] ↓ pám °kúlìyàn-#[1] púʇ
he *long:way* *he:go* *man* *wild*:foc *because*
ʇán °kútjìn núnaŋ-#[1]
they *they:sent* *him*-int
'The man who is wild will go away because they sent him.'

(136) /°wúʔan nún-# /°°míːn-mìn ʔémòwant
he:blows *him*-int *very:well* *he:will:grow:for:him*
yípam-#[1] ↓ʔáːk °ŋámpaˇàmànìy pút wún-#[1]
so:that-int *place* *ours*:foc:sp *because* *it:lies*-int
'...he blows on him so that he will grow up well for him, for that's our custom.'

(b) This pattern may occur on the pre-posed and post-posed *Quote Formula tagmemes* of a Direct Quote Sentence.

(137) ↓ níl °ʔínan ʇáw ʇánt-#[1] / níːy mák
he *this* *he:said* *to:them*-int *you(all)* *must*
°°ŋéːyàn-a[1]
you:listen-int
'He said this to them, "You must listen".'

(138) / ʔín mín °°mán-pàʈan-#¹ /°mín-àʔ³ ↓°ʈáw-#¹
this meat sweet-int *good*-int *she:said*-int
'"This meat is sweet, it's good", she said.'

(c) It may also occur on the first (*Thesis*) *tagmeme* of an Antithetical Sentence.

(139) ↓°kúŋk ʈáʈaŋ-#¹ ↕°°yáʔ-a¹ / púʈ wó:yan °ká:wàn
north I:looked-int *not*-int *because road east:foc*
mátan-#¹
we:came:up-int
'I looked north, but I didn't see (the place I was looking for) because we had come up from the east.'

(d) Sentence finally it is found in the Frustrated Sequence Sentence and the Completive Action Sentence.

Frustrated Sequence Sentence:
(140) / níl káʔ pá:ʈìy-àʔ³ Neg: ↕°°yáʔ-#¹ ↓ °lópam
she just:as she:tried-int *no*-int *right:off*-int
ʈú:tjantàm-#¹
it:fell:off:from:her-int
'Just as she tried it, no, she didn't succeed because it fell from her hand.'

Completive Action Sentence:
(141) ↑°°kál-kàlìn-à::³ ↓°ʔá:k ʔúwìn-#¹
they:rowed:and:rowed-int *place they:found*-int
'They rowed and rowed and then they found the place.'

3.2.15 The pattern ↓...-a¹ may occur sentence-finally in the contexts where ↓...-#¹ occurs (see Section 3.2.14). That is, it may occur on sentence-final relative clauses and asides, and on the final tagmeme of the Completive Action Sentence, Frustrated Sequence Sentence, and Direct Quote Sentence.

(142) / ʈán pé:tanàn °°kánàm wámpìn-#¹ ↓°ʔánan
they yesterday punct:emph *they:came*-int *that*
ʈáw púlant-a¹
he:said to:those(two)-int
'"They came yesterday" — that's what he told them.'

3.2.16 The pattern ↓...-aʔ³ has at least two uses. The general pitch level is lowered and the tempo is increased throughout the whole P-clause. The terminal has high pitch on the carrier clitic.

(a) This pattern may occur on the initial (but not the final) *Quote Formula* of a Direct Quote Sentence instead of ↓...-#[1] (see Section 3.2.13) provided that the *Quote tagmeme* is emphatic (either in its words or intonation).

(143) QF$_1$: ↓ ŋáy ʈáwaŋànt-à?[3] *Quote*: / nínt °°ʈáʈàn
I *I:said:to:her*-int *you* *you:look*-int
ʈónàkam-a[1]
only-int
'...I said to her, "You just look",...'

(b) It may also occur on the first (*Thesis*) *tagmeme* of an Antithetical Sentence, as may ↓...-#[1]. The rhythm of the P-clause seems to determine which of these two patterns will occur.

(144) *Thesis*: ↓ ʈón °pá:ʈìn-à?[3] *Antithesis*: / wáy °°tjíl-#[1]
another *they:tried*-int *bad* *sand*-int
'They tried another and it was no good, it was sandy,...'

3.2.17 The pattern ↓...-#[2] is used for Rhetorical Question Sentences when they are embedded and have a non-co-ordinate, non-sequential relationship to the preceding clause.

(145) ↑ ŋán °°wé?anàn-à?[3] ↓°ŋé:nàn wé:tjanàn-#[1]
we *we:dig*-int *what:foc* *do:we:follow*-int
↓°ʈà?púntamàn wé:tjanàn-#[1] /°wé?anàn-#[1]
root:foc *we:follow*-int *we:dig*-int
'...when we dig, what do we follow? We follow that root (when) we dig.'

3.2.18 The pattern ↓...-#[12<] occurs only on the question particle ?éy following an embedded Yes/No Rhetorical Question Sentence that has the intonation pattern ↓...-#[2].

(146) /°°wántàn púlaŋ-#[1] ↓ púl púʈ
you:leave *those(two)*-int *they(two)* *but*
°múlàtìypùl ŋámpaŋ-#[2] ≠ ↓°?éy-#[12<]
would:they(two):kill *us(all)*-int Q-int
/°°wántàmp púlaŋ-#[1]
we(all):leave *them(two)*-int
'Leave them! Would they kill us? Then let's leave them.'

3.2.19 The pattern ↕...-#[1] is used on P-clauses of two or more words to convey the meaning of extreme emphasis. This pattern is a

conditioned variant of the ↕...-àw$^{31<}$ pattern. There is no clitic and the pitch of the last syllable is low. The pitch range of the P-clause is greatly expanded and the syllable with clause-stress may optionally be greatly lengthened to indicate greater emphasis. This intonation may occur on P-clauses that are initial, medial, or final in a sentence in the kinds of contexts described for /...-#^{1} (Section 3.2.1).

(147) ↕ nín̓ ʈáyan °°pépanàŋ ʔúmp núŋantàkam-#^{1}
he axe sharp:with he:cut himself-int
'He cut himself with a very sharp axe.'

When yáʔ stands as a pro-verb, this pattern occurs on yáʔ, rather than the ↕...-àw$^{31<}$ pattern which would have been expected (see Section 3.2.23).

(148) / ŋáy káʔ °ʔín̓:yìŋànt-àʔ^{3} ↕ púʈ °°yáʔ-#^{1}
I about:to I:go:to:him-int *but no*-int
'I was about to go to him, but I didn't.'

(149) / nán °mín̓ múŋkanàk-#^{1} ↕°°yáʔ-#^{1}
that good for:eating-int neg-int
'That's not good to eat!'

3.2.20 The pattern ↕...-a^{1} is also used to convey extreme emphasis, and is used in the contexts described for /...-a^{1} (Section 3.2.2).

(150) ↓°nín̓làníy ʈ̲áw-#^{1} ↕ pántj ʔín̓aŋàn °°ʔátjʔùmpʔùmpan-a^{1}
he:foc:sp he:said-int *bird these very:beautiful*-int
'He said, "These birds are really beautiful."'

(151) ↕ ʔín̓ mín̓ °°yáʔ-a^{1}
this good not-int
'This isn't good at all!'

3.2.21 The pattern ↕...-àʔ^{3} is used to convey extreme emphasis in the same contexts as /...-àʔ^{3} is used (see Section 3.2.3).

(152) ↕°°yákkày-#^{1} ↕ wèntj-tá:ʔ °pótj-àʔ^{3} ↕ kékaŋ °kéʔ
excl-int *sores:bad sore*-int *spear:with* neg
púŋàn ŋáyaŋ-àʔ^{3}
you:spear me-int
'...Ouch! My wounds are very sore! Don't spear me!'

3.2.22 The pattern ↕...-à$^{31<>}$ and the non-verbal variant ↕...-èy$^{31<>}$ used by teenagers are used for emphatic Tag Questions (compare Section 3.2.4).

(153) ↕°°ŋámp ʔí:yamp-à$^{31<>}$
we(all) we:went-int
'It's true that we went, isn't it?'

3.2.23 The pattern ↕...-àw$^{31<}$ is used on P-clauses of one or two words to convey the meaning of extreme emphasis. The clitic -àw has a downward pitch glide with crescendo. The pitch on -àw optionally starts either higher or lower than the pitch of the syllable with clause-stress. When it starts higher, the rise is sharp. The pitch range in the P-clause is greatly expanded. The syllable which has clause-stress may be optionally greatly lengthened to indicate greater emphasis.

The pattern ↕...-#^{1} is a conditioned variant of this pattern which occurs in P-clauses of two or more words. Verbal P-clauses of two words tend to take ↕...-#^{1}, and non-verbal P-clauses of two words tend to take ↕...-àw$^{31<}$.

(154) ↕°°pí:ʔan-àw$^{31<}$
big-int
'It's really big!'

(155) ↕ kán °°wántàl-àw$^{31<}$
punct *we(two)will:leave:it*-int
'Come on, let's leave it!'

(156) ↕°°yáʔ-àw$^{31<}$
no-int
'No!'

3.2.24 The pattern ↕...-#^{2} is used to add emphasis to questions of the kinds described for /...-#^{2} (Section 3.2.5). The intonation of the following question particle used by the younger generation is not changed for emphasis.

(157) ↕ níl ʔà:k-°°ŋé:n wámp-#^{2}
he time:what came:he-int
'When did he come?'

(158) ↕ pám níl °°nán-#^{1} ≠ /°ʔéyʔ-#$^{12<}$
man he there-int Q-int
'Is the man there?'

3.2.25 The pattern ↕...-a^{2} is also used for emphatic questions in the same contexts as /...-a^{2} (Section 3.2.6).

(159) ↕ nínt °°wántìnpàl má:yàn-a²
you where:from you:picked:it:up-int
'Where did you get that?'

3.2.26 The pattern ↕...-#³ occurs when a negative emphatic statement is made. The range of pitch in the body of the P-clause is expanded and clause-stress always occurs on the last word. In this elliptical sentence the last word is the verbal negative ké? which occurs without a following verb. Pitch remains high and steady on this negative word and there is no 'intonation carrier' clitic.

(160) ↕ ŋáy ká:ŋk °°ké?-#³
I like neg-int
'I don't like (yams)!' or *'I don't want (to go)!'*

ABBREVIATIONS AND NOTATIONS

/	neutral pitch level and neutral pitch range of intonation pattern
↑	elevated pitch level and neutral pitch range
↕	neutral pitch level and expanded pitch range
↓	lowered pitch level and neutral pitch range
#	absence of intonation carrying clitic
≠	absence of pause between Phonological clauses
ˈ	primary word stress
ˋ	secondary word stress
°	clause stress
°°	sentence stress
^{1}	(superscript following carrier clitic) lowest contrastive pitch level in intonation patterns
^{2}	(superscript following carrier clitic) mid contrastive pitch level in intonation patterns
^{3}	(superscript following carrier clitic) highest contrastive pitch level in intonation patterns
^{13}	(superscript following carrier clitic) glide from pitch 1 to pitch 3. Other glides are symbolised by similar notation
( )	in syllable patterns: optional occurrence
-	in the gloss: separates translation of the morphemes from the intonation carrying clitic
-	in the vernacular: indicates compound words
:	in the gloss: links words and grammatical notations in the semi-literal translation of the vernacular word

:	in the vernacular: indicates vowel length
<	crescendo
<>	crescendo - decrescendo
AntAct	Antecedent Action tagmeme
ConsAct	Consequent Action tagmeme
Co:ordAct	Co-ordinate Action tagmeme
emo	emotive suffix
fact	factitive
foc	focus marking morpheme
FutRes	Future Result tagmeme
G-clause	Grammatical clause
imp	imperative
IndQ	Indirect Quote tagmeme
IndQuest	Indirect Question tagmeme
int	intonation pattern consisting of optional intonation-carrying clitic; and indication of pitch level and pitch range
IQuF	Indirect Question Formula tagmeme
IQF_1	Indirect Quote Formula tagmeme No. 1
IQF_2	Indirect Quote Formula tagmeme No. 2
MContQ	Merged Content Question tagmeme
MIndQ	Merged Indirect Question tagmeme
m.o.b.	mother's older brother
MQF	Merged Question Formula tagmeme
neg	negative
P-clause	Phonological clause
P-sentence	Phonological sentence
punct	punctilliar mood
QF_1	Quote Formula tagmeme No. 1
QF_2	Quote Formula tagmeme No. 2
sp	specifier morpheme
Text'	repetition of Text tagmeme (referred to as Text Prime)
ts	transitive subject

NOTES

1. It should be noted that the Aurukun dialect of Wik-Munkan described in this paper differs from the Coen dialect as described in my earlier paper (Sayers 1964). The Coen dialect is more like the dialects spoken at Edward River.

2. A computerized concordance of 120 pages of Wik-Munkan text material used in this analysis was compiled on the IBM 1410 computer at the University of Oklahoma by the Linguistic Information Retrieval Project of the Summer Institute of Linguistics and the University of Oklahoma Research Institute and was sponsored by the National Science Foundation Grant GS – 1605.

3. In my analysis of Wik-Munkan Sentences (Sayers 1976) I have analysed 'Sentence Topic', which includes introductory time clauses, as Sentence Periphery.

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